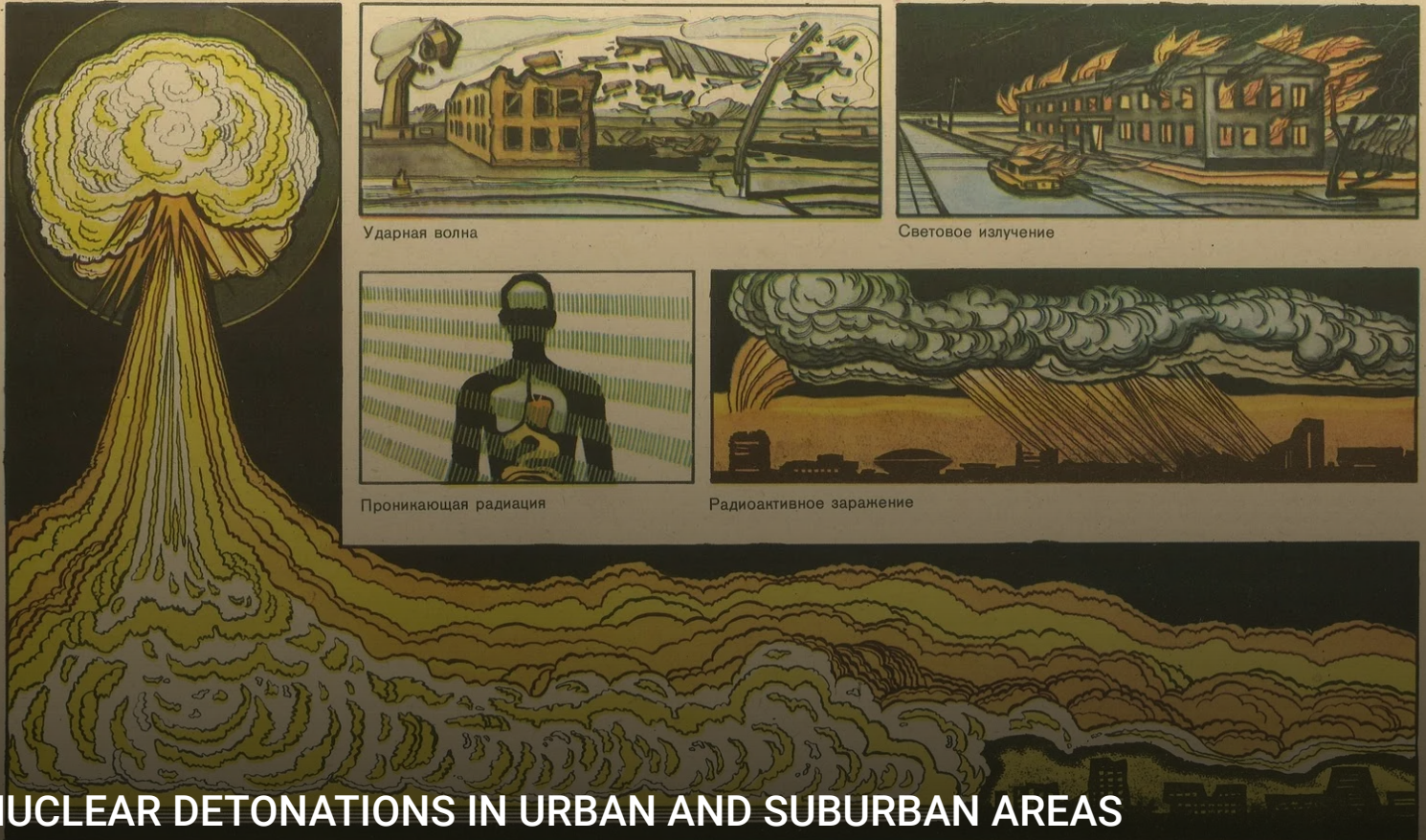


ПОРАЖАЮЩИМИ ФАКТОРАМИ ЯДЕРНОГО ВЗРЫВА ЯВЛЯЮТСЯ: УДАРНАЯ ВОЛНА, СВЕТОВОЕ ИЗЛУЧЕНИЕ, ПРОНИКАЮЩАЯ РАДИАЦИЯ, РАДИОАКТИВНОЕ ЗАРАЖЕНИЕ



## NUCLEAR DETONATIONS IN URBAN AND SUBURBAN AREAS

By **Military Story** - Gen 17, 2017

*(updated 3 January 2014 with latest secret UK National Archives files from 1984)*

In the previous post on this blog, *The exaggerated urban effects of nuclear weapons: proof tested civil defence*, we reviewed the evidence for shielding of thermal and initial nuclear radiation effects by city urban and suburban landscapes (concrete jungles), and compared modern cities with Hiroshima and Nagasaki in August 1945.

Update (3 January 2014): Britain's National Archives in Kew have today released the previously secret files on Gorbachev's December 1984 meeting with Thatcher when he was just a member of the Politburo and before he became USSR Premier (file PREM 19/1394) and also the secret British Ministry of Defence evaluation report (file PREM 19/1188, which has an earlier number since it begins in December 1979, with reports on American laser weapons developments) about President Reagan's SDI or "Star Wars" (the space-based anti-ballistic missile system, or space ABM, designed to protect US cities and replace the risky policy of "mutual assured destruction" with a safer policy of "mutual assured survival"). Some brief extracts from these documents (of relevance to this blog) are linked here.



SECRET

PART I

MT.

42.90 126

(File cover re-written)

CONFIDENTIAL FILING

MILITARY USES OF LASER TECHNOLOGY IN SPACE  
THE U.S. STRATEGIC DEFENCE INITIATIVE

DEFENCE

PART I : DECEMBER 1979

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
22/12/84							
ENDS							
PREM 19/1/88							



SECRET



10 DOWNING STREET

From the Private Secretary

15 October, 1984

Ballistic Missile Defence (BMD): UK Policy  
towards the US Strategic Initiative

The Prime Minister has considered the paper on Ballistic Missile Defence sent forward under the joint minute by your Secretary of State and the Foreign Secretary.

The Prime Minister's general view is that the case against the strategic defence initiative is not so open and shut as suggested in the conclusions in paragraph 59 of the paper. In particular, in the light of what the paper says of Soviet research in this area, she feels that the Americans have little option but to push ahead at least to the point where they can be confident that they are matching the Soviet Union.

The Prime Minister would like to discuss this paper soon in a restricted group. We are hoping to arrange this after OD on 22 October.

C. D. POWELL

Richard Mottram, Esq.,  
Ministry of Defence

SECRET

SECRET UK EYES A

BALLISTIC MISSILE DEFENCE (BMD): IMPLICATIONS FOR UK POLICY TOWARDS THE US STRATEGIC DEFENCE INITIATIVE (SDI)

INTERIM REPORT BY OFFICIALS

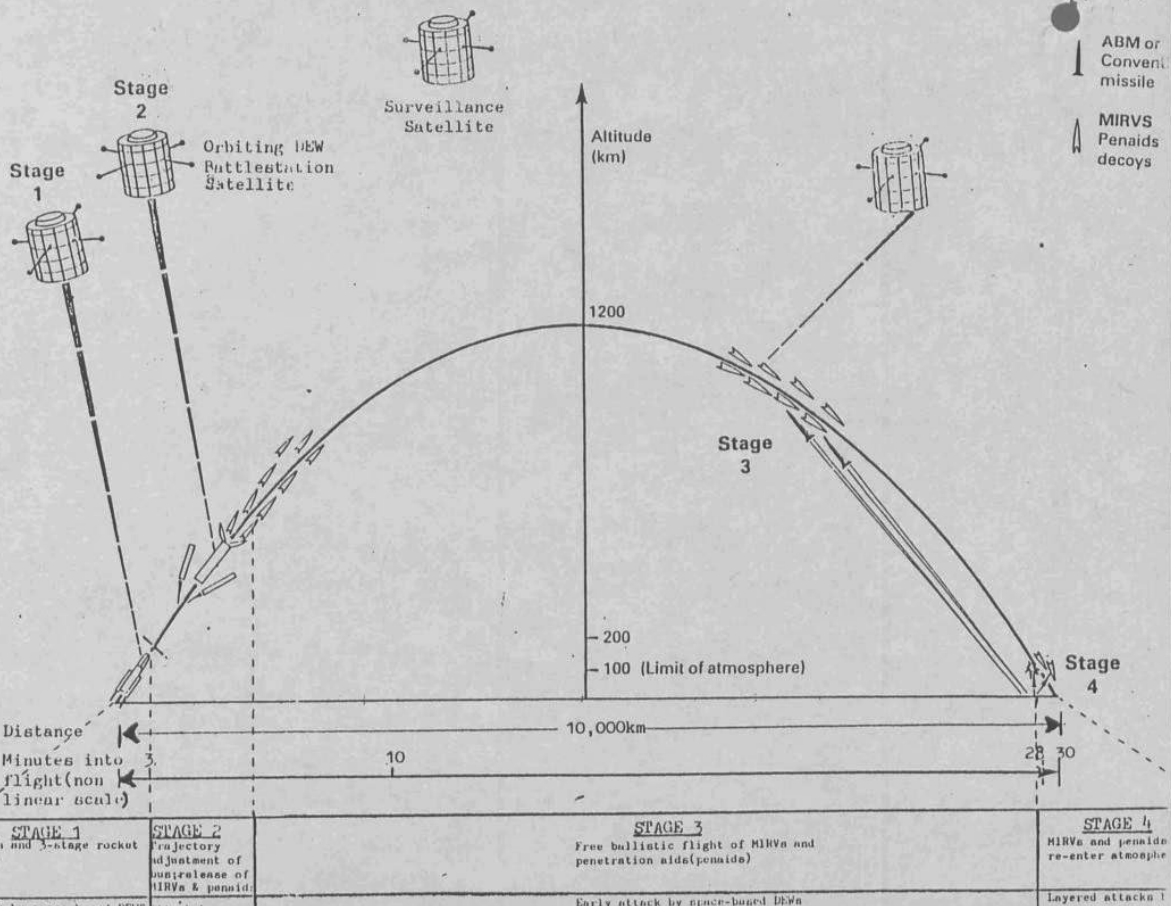
CONTENTS		PARAS
A	INTRODUCTION	1-5
B	THE COMPREHENSIVE BMD CONCEPT	
	GENERAL	6-8
	ARGUMENTS EXPRESSED IN FAVOUR	9
	ARGUMENTS AGAINST	10
	SPECIFIC EUROPEAN CONCERNS	11-17
C	PARTIAL BMD SYSTEMS	
	INTRODUCTION	18
	LESS THAN PERFECT DEFENCE	
	POSSIBLE ADVANTAGES	19
	DISADVANTAGES	20-21
	POINT DEFENCE	
	GENERAL	22
	POSSIBLE ADVANTAGES	23
	DISADVANTAGES	24
D	COSTS	25-30
E	ARMS CONTROL FACTORS	31-40
F	SPECIAL UK INTERESTS	
	HISTORICAL BACKGROUND	41-44
	IMPLICATIONS FOR TRIDENT	45-48
	IMPLICATIONS FOR UK INTELLIGENCE CAPABILITIES	49-50
	IMPLICATIONS FOR THE UK ECONOMY	51-54
	POSSIBLE REQUIREMENT FOR BMD BASES IN THE UK	55
G	POLITICAL HANDLING	56-58
H	CONCLUSIONS	59
I	RECOMMENDATIONS	60

ANNEXES

- A RESPONSES TO THE SDI
- B TECHNICAL ASPECTS
- C COMPARATIVE US AND SOVIET BMD ATTAINMENTS AND CAPABILITIES
- D CIVIL USES OF SPACE

SECRET UK EYES A

Figure 1 Schematic Representation of Multi-layered ballistic Missile Defence System



**Above:** the British comparison of Russian and American Star Wars (SDI or space based ABM) capabilities in Annex C of the Ministry of Defence report to Thatcher, noted that Russia was then already spending £1 billion a year in research on the subject despite suffering economically, and had a total of 32 Galosh ABM launchers protecting Moscow (half of them in protected underground silos). Reagan accelerated Star Wars in his 23 March 1983 speech, two weeks after declaring the USSR the "evil empire." The 1972 ABM Treaty permits each country up to 100 ABM missiles, but America had abandoned its Safeguard system in 1975 to save money as a result of Democratic pressure after Republican loss of influence resulting from Nixon's Watergate and Pentagon Papers (Vietnam War money waste) fiasco. The Ministry of Defence report recommended British hostility towards American SDI on the narrow-minded basis that a global Star Wars "mutual assured survival" strategy would undermine the UK's independent nuclear deterrent, but Thatcher responded that America must continue research to match USSR research as shown in Annex C.

The Prime Minister's five hours long December 1984 meeting with Gorbachev (file PREM 19/1394) led to her reporting to President Reagan: "He talks readily and, in contrast to the stultified manner of Soviet leaders, does not just stick to prepared statements. He picks up points made in discussion and responds to them. He was clearly not used to the sort of rigorous questioning which he got from me on things like human rights in the Soviet Union ... I certainly found him a man one could do business with. ... **the most striking point was the amount of time devoted to the threat of an arms race in outer space.**" (Emphasis added.)

On 19 December 1984, Gorbachev visited and entered 10 Downing Street without invitation and without any press interest, while the Prime Minister was in Hong Kong. In the same file, the Prime Minister heavily underlined the 22 May 1984 report by Sir James Goldsmith for the Defense Strategy Forum of the National Strategy Information Center, *Soviet Active Measures versus the Free Press: A European Perspective*, addressing the problem of:

"how should we react when allies of a totalitarian system try to use the freedom of our press as a protective screen behind which they can conspire to destroy freedom itself? ... The remedy is more investigation, more information and more publication of the truth. And for each of us in our own way to draw attention to the facts. ... Every time the Soviets embark on a new 'peace' offensive, too many of us are pitifully eager to forget that this is no more than a modulation of Soviet tactics ... many of us still want to believe that the problems that separate us are problems that can be resolved by negotiation and mutual goodwill. But unfortunately we must realize that **we cannot find lasting peace through negotiation because what the Soviets really want we cannot negotiate** [emphasis in bold to Thatcher's heavy underlining of words]. ... We cannot negotiate away our freedom ...

"There is no easy solution, no quick fix. ... the Soviets recognise that their most effective current strategy is not armed conflict but instead to weaken us from within. ... then they can win without armed conflict. ... Europe would fall like a rotten fruit. ... Politically they have established communist parties in each country. In Italy, France, Greece and Portugal, for example, these have grown to a substantial size, gaining between 12% and 30% of the vote. But whenever candidates, standing



under the Communist party label, are unable to succeed at the ballot box, they switch labels and adopt the camouflage of socialism. They penetrate local socialist parties. Recently in Great Britain, the Cabinet papers for Clement Attlee's period in office as Prime Minister were declassified. They show that Attlee, a moderate socialist leader, understood and stated clearly, as early as 1950, that as a result of electoral support, the Communist Party of the UK had changed its strategy from trying to obtain parliamentary representation to infiltrating the socialist party [and later CND and environmentalism lobbies] and other centres of power. ... Their major propaganda thrusts have to encourage

- Unilateral disarmament
- neutralism
- increased trade with the Soviet bloc
- anti-Americanism

"... Evidence is available which indicates that the investment by the Soviets in propaganda [in the West] is between \$3 and \$4 billion per annum. ... An analysis of the principal Soviet front organizations illustrates the breadth of the active measures effort. One of the major organizations is the 'World Peace Council' (WPC). It originated in 1949 from the 'World Congress of Intellectuals for Peace.' The WPC owns a number of publications which are printed in English, French, Spanish and German. Its principal propaganda objective is to encourage the West to disarm. The WPC conducts its operations on a worldwide basis and it has spawned regional and national peace committees [e.g. CND, as documented in detail by Paul Mercer's 465 pages long 1986 book, *Peace of the Dead: The Truth Behind the Nuclear Disarmers*; for detailed review see the *London Review of Books*, v9, n1, 8 Jan 1987, pp 10-11; see also Dr Julian Lewis's "When is a smear not a smear?" article in the *Salisbury Review*, October 1984, also published in the Summer 1984 issue of *Defence Campaigner*: "Several years ago the political analyst, S. E. Finer, wrote a book about pressure groups, concluding that the more noise an organisation makes publicly, the more this indicates its lack of real influence in the corridors of power. People shouting on the streets are usually obliged to do so because of their failure to influence the policy process. ... it was just 'bad form' to criticise the Holy Movement – irrespective of the validity of the criticism. ... The late Senator Joseph McCarthy certainly has a lot to answer for: his campaign of wild and often unsubstantiated allegations of Communist activity has almost succeeded in giving anti-Communism in general a bad name. There is today a great propensity for 'reverse McCarthyism', a willingness to dismiss any charge of far Left misbehaviour, however accurate, as just 'Reds-under-the-Bed' – even when the Reds are no longer under the bed, but in it. Have you noticed, for example, how the allies of the Militant Tendency (in what currently passes for the Labour Party) continually refer to the feeble attempts being made to keep these revolutionary Trotskyists in check as a 'witch-hunt'? Now, the whole point about a witch-hunt is that it was always unjust, because witches were non-existent and the poor wretches accused and killed for sorcery were totally innocent of any crime. Had they really possessed evil supernatural powers, the injustice of hunting for witches would have been far from self-evident. ... So it is with the 'smearing' of CND by its opponents. Basically, this organisation sails under false colours. ... The CND is not only one-sided in its disarmament recommendations, it is also grossly one-sided in its political

affiliations. ... Take the December 1983 Annual Conference elections, for example, when the six CND officers and 20 CND Council members were chosen. Here is a breakdown of the officers: **Chair: [sic] Joan Ruddock** – a committed Left-wing Labourite who has repeatedly belittled the existence of a Soviet threat, advocates a neutral Britain out of NATO, and recently admitted: "My life has become one of greater and greater commitment to Socialism." (City Limits, 2 March 1984) **Vice-Chair: (i) Professor Michael Pentz** – former Communist Party local government candidate, now (like so many other ex-CP members) on the hard Left of the Labour Party. Has been involved with the Soviet front body, the World Federation of Scientific Workers, as well as the British arm of the Kremlin-backed World Peace Council. **(ii) Joy Hurcombe** – like Ruddock, a former Labour Parliamentary candidate on the Left of the Party. Deeply involved in the controversial, Trotskyist-dominated Labour CND group. **(iii) Roger Spiller** – a full-time trade union official and Labour activist, on the Tribune wing of the Party. Delegated as an 'Observer' representing the CND at the World Peace Council's phony Prague Peace Assembly in 1983. **(iv) Meg Beresford** – who has described herself as a 'Socialist Feminist'. **Treasurer: Mick Elliott** – delegate in 1980 to the World Peace Council's so-called World Parliament [!] of Peoples for Peace in Bulgaria, which according to Vladimir Bukovsky unanimously voted to endorse the puppet régime in Afghanistan, installed by Soviet tanks the previous December. Which way did Elliott vote? Elliott was also 'Parliamentary Adviser' to Richard Caborn, a pro-Soviet World Peace Council member – and the MP installed by the hard Left after a constituency coup in Sheffield led to the ousting as Labour candidate of the former Secretary of State for Defence Fred Mulley. Of the combined total of 26 CND officers and Council members elected at the 1983 Annual Conference, at least 20 are committed Communists, Labourites or 'Socialists' of one description or another. Of the 20 Council members chosen, a summary can be given as follows: **Four open members of the British Communist Party** – (i) Professor Vic Allen – Arthur Scargill's eminence grise and a leading member of the British-Soviet Friendship Society. Now serving on the CND's International Committee, which organises delegations to the so-called Soviet Peace Committee and other World Peace Council fronts, (ii) Jon Bloomfield – the CND's other 'Observer' at the Prague Peace Assembly, (iii) Mary Brennan – who calls herself a 'Catholic, Communist, Doctor', (iv) Ian Davison – Secretary of Scottish CND and a senior figure in the CND 'establishment'. **Nine known Labourites** – (i) & (ii) the Trotskyists Dick Withecombe and Judith Bonner. The latter wrote in her CND election manifesto: "our allies are not NATO generals and the likes of Mountbatten who support the butchering of liberation movements in Central America and Northern Ireland". (iii) & (iv) Two defeated Left-wing Labour MPs, Joan Lestor and Bob Cryer. (v), (vi) & (vii) Labour activists Walter Wolfgang, Penny Auty and the unspeakable Helen John – the last of whom is a close political ally of Ken Livingstone, is a veteran Greenham Common camper, and had her fares paid to the 1983 Prague Peace Assembly by the Women's International Democratic Federation, a notorious Soviet front organisation. (viii) Candy Atherton – a leading light in the 1982 anti-Falklands Task Force agitation within the CND and the Labour Party. Finally, (ix) Jenny Edwards – a full-time employee at CND Head Office until late 1983, when Labour's Camden Council took her on with a five-figure salary at the ratepayers' expense as a full-time 'Peace Officer' for the Borough. **One 'unaffiliated Socialist'** – James Hinton – of the far Left persuasion. Even of the remaining six, (i) & (ii) Annajoy David and D. Desch appear to stand well to the Left of Centre; (iii) Paul Johns (of Christian CND) was happy to



write an article for the Communist Morning Star newspaper in January 1984, and (iv) Giles Perritt (formerly of Schools Against the Bomb) described himself as a 'Labour supporter' at a conference in the spring of 1983. Nor should we forget the (non-elected) Vice-Presidents of the CND, 11 in all, including Labour Leftists Lord (Hugh) Jenkins, Ron Todd (Transport & General Workers Union), Frank Allaun (of the pro-Soviet British Peace Assembly, and Labour Action for Peace), and Jo Richardson; ex-Communist Party members E. P. Thompson and Phil Bolsover; and, last but not least, Dr John Cox who was elected to the Executive Committee of the British Communist Party at its 38th Congress in November 1983. This was, of course, the memorable assembly when CND General Secretary Bruce Kent referred to the Communists as "partners in the cause for peace in this world", and praised the nauseatingly pro-Moscow paper, the *Morning Star*, for its "steady, honest and generous coverage of the whole disarmament case". (A measure of its honesty, and of its conception of 'Peace', can be gauged from its banner headline on the death of Andropov, just three months later. "MAN OF PEACE DIES", it said of the butcher of the Hungarians, the architect of Soviet psychiatric abuse of dissidents, and the ruthless former head of the KGB.) The notion of 'smearing' is that of making broad, unspecific and untrue allegations. The person-by-person analysis just set out is as specific as can be. Furthermore, it is accurate – Bruce Kent's response to a similar account published in the *Daily Telegraph* mainly being to assert that the CND Council would also include many more delegates from the regions, and that the "entire Council then forms its Executive". What he failed to predict was that of the 25 places on the CND Executive, more than half were to be filled from the 26 individuals elected by the Annual Conference, who in December 1983 constituted almost a clean sweep for the Left, as we have seen. In any case several of the other Executive Members turned out to exhibit exactly the same sort of Leftist orientation, including Labourites Jane Mayes and Jane Oberman, and Communists Paul Nicholls and Alan McKinnon. Such are the convolutions of the CND's internal 'democratic' procedures, that the first three of these – all of whom were rejected by the Annual Conference as ordinary Council members – nevertheless have managed to find their way indirectly, not only onto the Council after all, but also onto the national CND Executive as well... However, let me leave the last word on whether or not it is a 'smear' to denounce the CND as a Left-wing front, to the National Election Agent of the Communist Party of Great Britain, John Peck. According to the January 1984 issue of *World Marxist Review*, Peck gave the following reassurance to yet another Kremlin-backed 'Peace' symposium in Prague: "some participants in the campaign [for nuclear disarmament] tend to equate the Soviet Union with the United States as being equally responsible for the arms race. But these are in a minority. *The national leadership of the CND see the main threat as emanating from the United States.*" [Lewis's emphasis.] A smear is not a smear, it seems, when it comes from the mouth of a Communist."]. ...

"An example of a Soviet propaganda campaign was the campaign against the neutron warhead. It was part of the Soviet general campaign aimed at preventing NATO from modernizing its Intermediate Range Nuclear Forces (INF). The campaign was led by the World Peace Council who declared the 6th to 13th August 1977 as an international 'week of action'. It then became a coordinated effort of the whole propaganda apparatus including the use of agitprop. The sequence of events was:

- Peace councils in various East European States held protest meetings.
- In Istanbul, a peace committee demonstrated in front of the U.S. Consulate General.
- In Accra, a group delivered a protest letter to the U.S. Embassy.
- In Stuttgart, Frankfurt and Dusseldorf, front groups organized demonstrations in front of the U.S. Consulate General.
- Similar agitation was carried out by front groups in Lima and Tanzania, as well as a Peruvian protest to the United Nations.
- Other major international fronts such as the 'World Federation of Trade Unions' participated in the international week of action.

"Also there were the series of Communist-planned conferences in Europe. The target of this effort was the United Nations 'Special Session on Disarmament' (SSOD) to be held in New York from 23rd May to 28th June. Three conferences were organized to provide psychological momentum to the SSOD. The World Peace Council, through one of its sub-fronts, the 'International Liaison Forum of Peace Forces', organized a symposium from the 6th to 8th February in Vienna on 'Nuclear Energy and the Arms Race' in collaboration with the International Atomic Energy Agency, a United Nations body. ... there was the 'International Forum on the Neutron Bomb' held from the 18th to 20th March in Amsterdam. ... All this activity was picked up [naively, not critically] in the Western media. NATO Secretary-General Luns described this Press comment as all consisting of 'half truths, untruths, and ignorance'. On 8th April 1978 it was announced that President Carter [as a result of WPC pressure in the media] had decided to delay the production and deployment of the neutron warhead. The chief of the International Department of the Hungarian Communist Party, Janos Bercz, wrote that the 'political campaign against the neutron bomb was one of the most significant and successful since World War II.' Another type of propaganda campaign is the type which attempts to discredit an individual [e.g. Franz Josef Strauss, Herman Kahn, Reagan, Thatcher, other opponents of tyranny]. ...

"The campaigns often begin as a result of a clear policy decision taken by the Soviet propaganda apparatus. ... As explained by the defectors such as Levchenko, Bittman and others ... The work of the inner core of agents and front organizations then influences a far larger group of sympathetic left leaning journalists. ... They do not realize that they are an extension to the Soviet propaganda apparatus and would indignantly and sincerely reject any such suggestion. Then comes the outer layer consisting of those who follow fashion and seek easy praise. Responsible journalists can also be disinformed by these campaigns. When a journalist works on an article, he refers to the press cuttings file which covers the subject about which he is writing. Information ... will be used over and over again. So, once the press cuttings files have been polluted by propaganda, the false information will be repeated quite innocently and as it is repeated will gather further credibility and momentum. ... Here are some thoughts ... We need ... better journalism. The better informed the public, the better equipped it is ... The trouble with today's intellectual environment is that few dare discuss the problem. It attracts accusations of McCarthyism. It is taboo. ... It is a genuine problem which needs free and open discussion. ... in a free country the best remedy is wide publication of the true facts. ... journalists should investigate and publish. But they face a problem. There is a tradition of forbidden



areas. Dog must not eat dog. Not only is it unpopular to expose a colleague or a journal, but it is also difficult to find papers who would publish your material. Investigation should not be concentrated on the unpopular. It takes no courage to be fashionable, to express conventional wisdom and comfortably to join the pack in attacking the same wounded stag. Courage resides in saying the truth that does not please and which can make you a pariah in the eyes of your peers. This precisely is the duty of the press and one of the great justifications for the freedom of the press."

**Exactly! This taboo censorship of truth by the non-free but self-praising taboo-laden media continues today. The key problem with hegemony is that straw-man "critics" are used to try to defend objectivity. E.g., if the left make up a lie, the media will claim to be objective by the tactic of quoting a "straw-man" (some prominent right-winger for instance), who doesn't know what he is talking about. Then they claim to have disproved the best criticisms of the left, while all the time ignoring the objective facts which are promoted by less prominent people who have less media influence. The example below proves the vital censored facts that need to be addressed.**

## UK National Archives: HO 225/54 and CAB 21/4053

### HOME OFFICE

#### SCIENTIFIC ADVISERS' BRANCH

The Circulation of this paper has been strictly limited. Mr Shatt

CD/SA 54

It is issued for the personal use of .....

Copy No. 54

SECRET

#### Some Aspects of Shelter and Evacuation Policy to meet H-Bomb threat

##### 1 Introduction

At the present time, with such air raid shelters as are at present in existence and allowing for the planned evacuation of the priority classes, the deaths from a single hydrogen bomb (assumed to have a power a thousand times that of the Nagasaki atomic bomb) on London would be nearly  $2\frac{1}{2}$  million, and from five bombs, one each on London, Birmingham, Liverpool, Manchester and Glasgow over 6 million. The first object of Civil Defence must be to prepare a scheme to reduce this figure. No attempt is made in this note to plan such a scheme, but the effect on casualties of certain arbitrary shelter and evacuation measures is discussed in order to indicate the order of magnitude of the reduction which a properly worked out scheme might be expected to achieve.

##### 2 Method of Estimating Deaths

The deaths from a nominal atomic bomb among a population of standard density (43.56 per acre) all in houses have been estimated (CDJFS(EA)(48)14

Table 4

Deaths from 1000N bombs after evacuation of 5 mile radius circle for London and 3 mile radius for other cities. Evacuees assumed accommodated in surrounding annulus where they and the original inhabitants are provided with shelter having a safety rating of 80.

**20 Mt**

City	Position of bomb		
	Central	2 miles from centre	In position to cause maximum deaths
London	0	0	518,000
Birmingham	0	159,000	256,000
Glasgow	0	171,000	247,000
Liverpool	0	174,000	247,000
Manchester	0	164,000	257,000
Total	0	668,000	1,525,000

Table 5

Deaths from 1000N bombs after evacuation of 5 mile radius circle for London and 3 mile radius for other cities. Evacuees assumed accommodated in surrounding annulus where they and the original inhabitants are provided with shelter with a safety rating of 90.

**20 Mt**



Table 5

Deaths from 1000N bombs after evacuation of 5 mile radius circle for London and 3 mile radius for other cities. Evacuees assumed accommodated in surrounding annulus where they and the original inhabitants are provided with shelter with a safety rating of 90.

**20 Mt**

City	Position of bomb		
	Central	2 miles from centre	In position to cause maximum deaths
London	0	0	261,000
Birmingham	0	56,000	155,000
Glasgow	0	64,000	152,000
Liverpool	0	67,000	152,000
Manchester	0	62,000	151,000
Total	0	249,000	871,000

It will be seen from Tables 4 and 5 that, with this scheme of total evacuation of a central area and shelter in the surrounding annulus, a central bomb causes no deaths at all. Clearly, however, the enemy would be aware of our provisions and might well choose to drop his bombs where they would cause maximum casualties. On average, and without allowing for local concentrations which would be bound to occur in the "reception annulus", this would be at about 7 miles from the centre in the case of London and about 4 miles for the other cities. The average deaths from bombs in these worst positions are

**Above:** by evacuating the central areas of cities near the fireball and crater, and sheltering the evacuated people from the heat (which is largely stopped by the city skyline shadowing effect anyway, except for upper floors of very high buildings, facing the fireball), blast and fallout, *all casualties could be avoided, in accurately-placed 20 megaton surface bursts on cities.* With the much smaller MIRV warheads (around 200 kt) or terrorist/ clandestine threat (around 10 kt) today, the situation is even more positive as based on a re-evaluation of civil defence in Hiroshima and Nagasaki. (Since blast waves travel over large distances averaging only about a quarter of a mile per second, there is plenty of time to "duck and cover" to avoid blast wind displacement and flying debris.) On 1 September 1939, two days before Britain declared war, it evacuated children from London.

This was partly about sending a deliberate political message or "signal" to the enemy about the seriousness of the ultimatum, and partly as partial insurance against a surprise "knockout blow" air strike. Herman Kahn made the point in 1976 congressional hearings (included in the appended documents to the report linked here) that evacuation and improvised shelter are more credible than surprise attacks, because we have a protected second-strike retaliation capacity (submarines at sea) which takes away any incentive for a nuclear 9/11 or Pearl Harbor type surprise attack. **Leader-Williams concludes that even in the worst case, the fatalities in 100 megaton nuclear attack on Britain that tried to target the evacuated (dispersed) population could be kept to 2% of the population by a combination of shelters and evacuation from the crater and fireball or severe blast area, leaving 98% of the population alive.**

This declassified Secret 1954 British scientific report (linked here), *Some Aspects of Shelter and Evacuation Policy To Meet H Bomb Threat*, by Edward Leader-Williams of the U.K. Home Office Scientific Advisory Branch, points out how to use a combination of city centre evacuation and blast/fallout sheltering of the evacuated personnel to avoid coercion and potential casualties in a September 1939-type crisis from the threat of five 20 megaton thermonuclear bombs (100 megatons total) on major UK cities. Other relevant declassified documents are appended. The copy of this secret turned into PDF format was the one issued to William Strath (Cabinet War Plans Secretariat), who used it in his March 1955 report "Defence Implications of Fall-Out from a Hydrogen Bomb", which William Strath and Sir Normal Brook discussed with Defence Secretary Harold Macmillan (who was later Prime Minister) on 24 March 1955 (the following quotations from the meeting report are from U.K. National Archives file **CAB 130/109, "GEN.491/1st Meeting, Defence Implications of Fall-Out from a Hydrogen Bomb, 24 March 1955"**):

*"THE MEETING FIRST EXAMINED THE REPORT'S PROPOSALS ON EVACUATION WHICH WERE BASED ON THE PROMISE THAT A WIDER DISTRIBUTION OF THE POPULATION WOULD REDUCE THE NUMBER OF CASUALTIES. ... THE MEETING WERE INFORMED THAT, WHILE IT WAS NOT POSSIBLE TO PROVIDE EFFECTIVE SHELTER WITHIN THE VICINITY OF A HYDROGEN BOMB, IT WOULD BE PRACTICABLE TO PROVIDE ADEQUATE SHELTER AGAINST FALL-OUT BEYOND THE AREA OF DEVASTATION BY BLAST. SCIENTIFIC THINKING WAS AT PRESENT MOVING TOWARDS THE VIEW THAT BRICK-BUILT HOUSES WOULD GIVE BETTER PROTECTION AGAINST FALLOUT THAN HAD PREVIOUSLY BEEN THOUGHT. A TRENCH WITH OVERHEAD EARTH COVER WOULD MAKE MORE EFFECTIVE SHELTER BUT IT WOULD BE A DAMP AND UNCOMFORTABLE PLACE IN WHICH TO HAVE TO STAY UNTIL THE RADIO-ACTIVITY HAD ABATED. IT WAS HOPED THAT FUTURE RESEARCH WOULD DEVISE A REFUGE ROOM GIVING ADEQUATE PROTECTION WHICH COULD BE CONSTRUCTED IN THE ORDINARY HOUSE. IF THIS COULD BE DONE, HOUSE-HOLDERS COULD BE ADVISED WHAT STEPS THEY COULD THEMSELVES TAKE TO SECURE SATISFACTORY PROTECTION. [EMPHASIS ADDED.]"*

The secret March 1955 Strath report on the effects of 100 megatons of surface bursts on British cities, **far** from dismissing cheap and effective civil defence against fallout and condemning *Protect and Survive* type improvised civil defence for personnel evacuated from the centre of target cities (as most historians have claimed on the basis of brainwashing by Duncan Campbell's heavily-biased and misleading *War Plan UK: The Truth About Civil Defence ...*), **did the very opposite**, concluding that

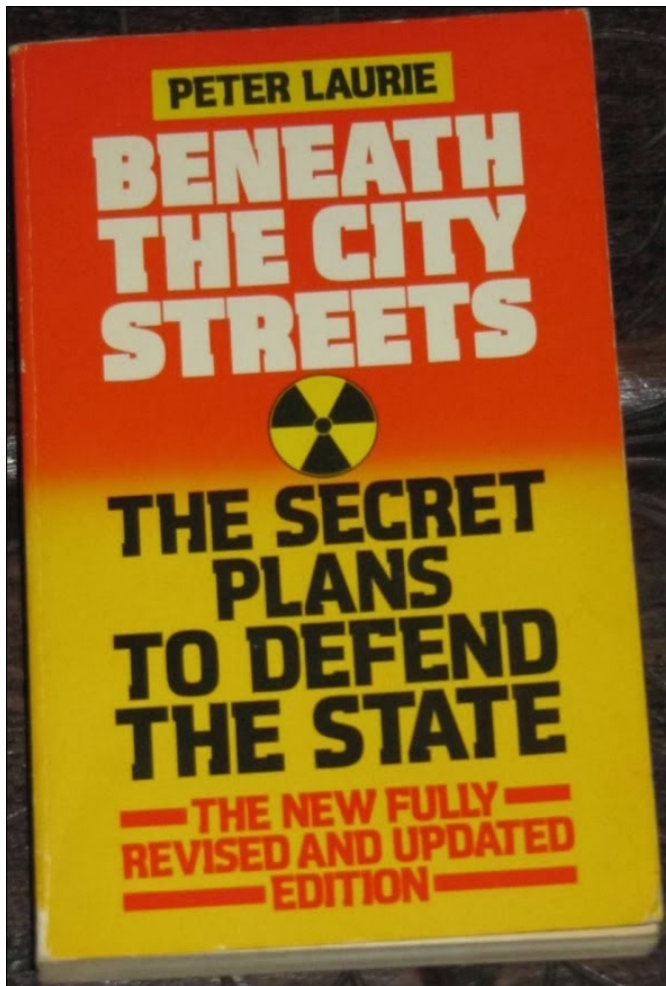


fallout from 100 megatons (i.e. 10 x 10 megaton surface bursts) would **"immobilise considerable areas of the country and force inhabitants to keep under cover for some days and in certain areas [directly downwind of explosions] for a week or more ... A consistent policy of education is therefore required to acquaint everyone with the effects of the hydrogen bomb, and particularly with the hazard from radioactivity about which people are still largely ignorant."** [Source: Lorna Arnold and Mark Smith, *Britain, Australia and the Bomb*, Palgrave Macmillan, 2nd ed., 2007, page 79]. This is directly contrary to what many British political academics and historians have chosen to "read into" the Strath report, when claiming that Strath dismissed the value of simple of simple countermeasures. The policy of evacuation from cities was openly published in the UK Home Office *Civil Defence Instructors' Notes: Welfare Section Part III: Evacuation and Care of the Homeless*, H.M.S.O., London, 1960 (revised 1963), which has three parts, dealing with (1) Billeting, (2) Dispersal of the Priority Classes, and (3) Care of the Homeless, and a film shows the rest centres and billeting, sheltering and emergency feeding of the evacuees or homeless which was the British Civil Defence Corps "Welfare Section" role until Labour closed it down in March 1968. The basis for evacuation planning in 1956 extended for fallout "hotspots" where sheltering was inadequate to enable survival, Dr John McAulay's *Manual of Civil Defence, Vol. 1, Pamphlet 2, Radioactive fallout – provisional scheme of public control* (originally unclassified in 1956, but reprinted in 1957 classified "restricted"). This is totally at odds with most popular historian's biased treatment of the Strath report, due to prejudice stemming from Duncan Campbell's 1982 political propaganda book which ignores the scientific evidence and historical facts entirely (see for instance the sources here and here)

Edward Leader-Williams, an engineer, was Lord Baker's assistant during the invention and testing of the indoor "Morrison shelter" in World War II, which proved vital and highly effective against V1 attacks.

In 1955, Leader-Williams drafted the first U.K. Home Office "Protect and Survive"-type indoor "inner refuge" improvised fallout shielding advice, as documented in detail in Dr Smith's paper, "Architects of Armageddon: the Home Office Scientific Advisers' Branch and civil defence in Britain, 1945-68", *British Journal for the History of Science*, vol. 43 (2010), pp. 149-80. (See also discussion linked here.)





Peter Laurie, "Beneath the City Streets," Granada Publishing Limited, 1983 revised and updated edition, 303 pages

Doubtless no nuclear government is any more anxious to go to nuclear war than its citizens. But that is not the point. By invoking the spectre of counter-city war, the government can get larger taxes for military spending than they otherwise could, they can spend them in secret with little or no informed public interference, and by spending these huge sums it obtains vast amounts of influence, jobs for supporters, power ...

... Russia's H-bomb is money in the bank to them now.

274 PETER LAURIE, *Beneath the City Streets* 1979 revised edition

It is odd how in this blackmail operation pacifists work directly with the military. For instance, my conclusions in Chapter 8 that it is not impossible that Britain might survive a nuclear war, and that in some ways it might have some beneficial effects, were received with horror by the more liberal, anti-war critics. They take the position that nuclear war is so frightful it is heresy even to suggest that it may not be the end of all things. Mr Sartori wrote in *Nature* (8 January 1971): 'Fostering such complacency can only make the public more receptive to the idea that initiation of a nuclear war by the West is a rational possibility to be entertained under some circumstances.'

But in any case, my aim in presenting these calculations is not to make nuclear war more likely, but to refute those who believe that it is the ultimate catastrophe.

Every time a liberal, humane person says nuclear war is so frightful it must not even be discussed, the military smile, because to the ordinary taxpayer the only alternative is more spending on defence.

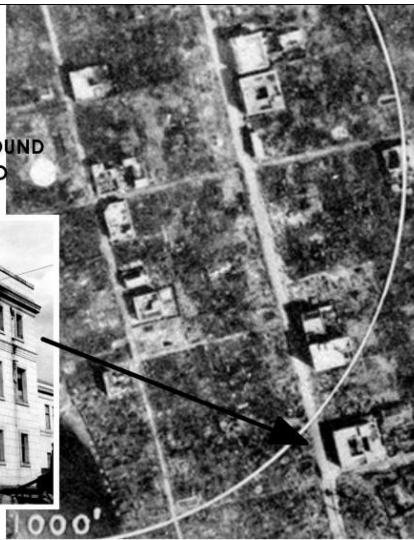
Above: Peter Laurie's 1970 book (revised 1979 and 1983) alleged that CND's and Nature journals published emotion-based "defence" of exaggerations of nuclear attacks of nuclear war and dismissals of cheap and effective civil defence actually lay behind the arms race (the stockpiling of weapons at immense expense): because **if you refuse to defend yourself against fallout you must instead pile up more and more weapons!** (The man who refuses to wear a flak jacket in case it doesn't work, must instead trust on deterring attacks by carrying more impressive weapons.) Of course, like the fact-intolerant idealists like the 1937 "Cambridge Scientists Anti-War Group", what CND *claimed* it was doing during the cold war was somehow reducing the threat by scare-mongering for pacifism. However, their scare-mongering exaggerations (claims that London would be totally annihilated by a single gas air raid which would definitely be the opening event of WWII) *caused the appeasement policy which gave the Nazis time to rearm faster than Britain, widening the disparity in arms and decreasing the possibility for Britain to win a war with minimal casualties!* It seems to still be taboo to even cite Paul Mercer's debunking of this allegation in his well-researched 1986 book, *Peace of the Dead: the Truth Behind the Nuclear Disarmers* (Foreword by Lord Chalfont). This book documents the funding and control of communist CND committee members by the Moscow Kremlin-controlled "World Peace Council". One ignorant abusive bigot who refused to read the book even claimed that the *title* of the book implied a prejudice, when in fact it just summarized the conclusion the author arrived at after years of infiltration of CND's head office!



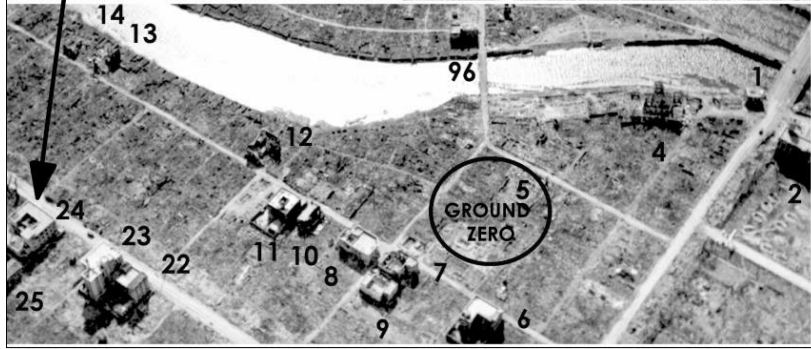


Building No.: 24. Coordinates: 5H. Distance from (GZ): 1,300, (AZ): 2,400.  
 NAME: Bank of Japan, Hiroshima branch.  
 CONSTRUCTION AND DESIGN  
 Type: Reinforced-concrete frame (steel core).  
 Walls: Reinforced concrete (12-inch) and stone (6-inch).  
 Floors: Reinforced concrete.  
 Framing: Reinforced concrete.

REMARKS: Fire only in room at southwest corner of second story and in entire third story. No fire in building right after bomb, but afire at 1000 hours. Fire in room in second story extinguished with water buckets.



U.S. Strategic Bombing Survey report 92



**U. S. STRATEGIC BOMBING SURVEY**

**PHYSICAL DAMAGE DIVISION**

Building No.: 59. Coordinates: 5I. Distance from (GZ): 4,100, (AZ): 4,500.

NAME: Gelbi Bank Co., Hiroshima Branch (in use at time of bomb as the Higashi Police Station).

**CONSTRUCTION AND DESIGN**

Type: Reinforced-concrete frame.

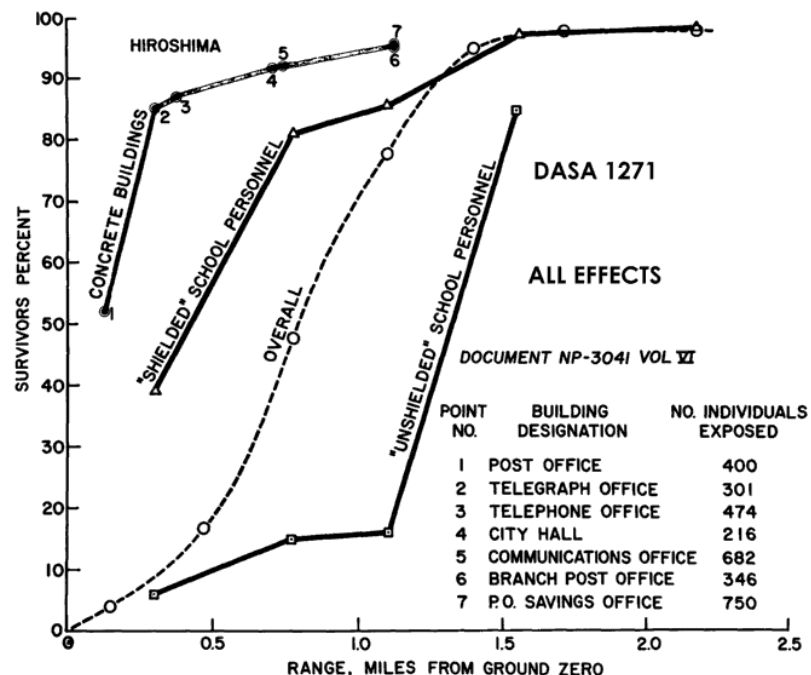
Walls: 8-inch reinforced concrete monolithic—medium window.

Floors: Reinforced-concrete beam and slab—parquet and tile.

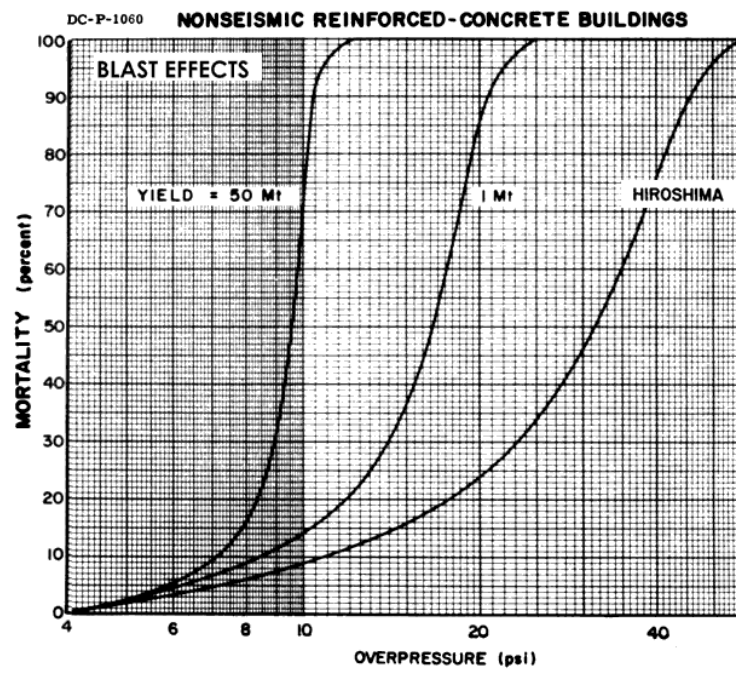
Framing: Reinforced-concrete beam and slab.

EXTENT OF FIRE: Total floor area: 16,200 square feet. Floor area burned: 0 square feet; 0 percent (after blast damage).

REMARKS: Sparks from south exposure ignited few pieces of furniture in first and third stories and cotton blackout curtains in first story about 1030 hours. Fires were extinguished with water buckets by people inside. Negligible fire damage resulted. Some of exposing buildings had just been removed prior to the bomb.



Ashley W. Oughterson, et al., *Medical Effects of Atomic Bombs*, NP-3036 to NP-3041 (Vols. I-VI), Army Institute of Pathology, 1951.



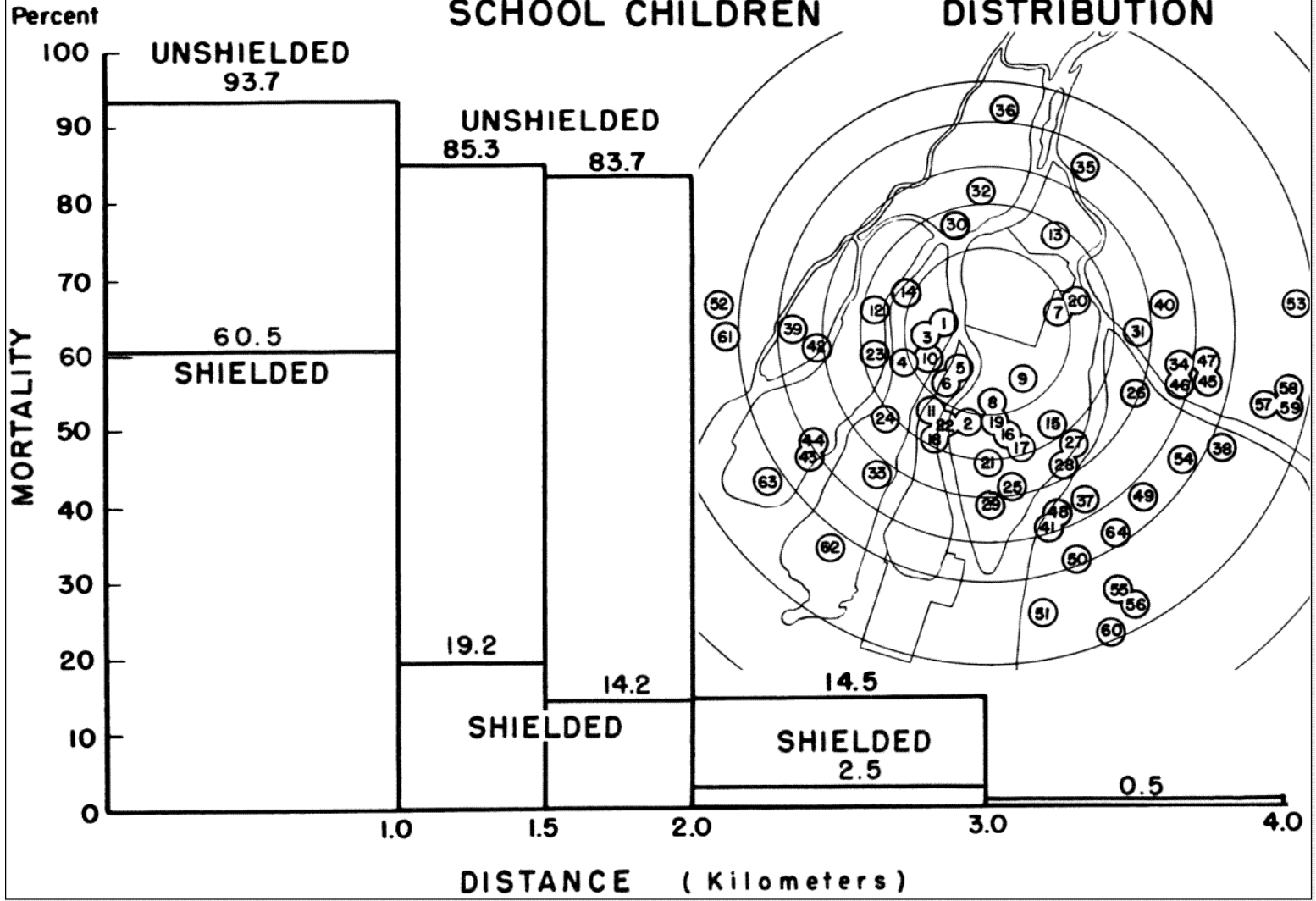
L. Wayne Davis, Donald L. Summers, William L. Baker, and James A. Keller, *Prediction of Urban Casualties and the Medical Load from a High-Yield Nuclear Burst*, DC-FR-1060, The Dikewood Corporation



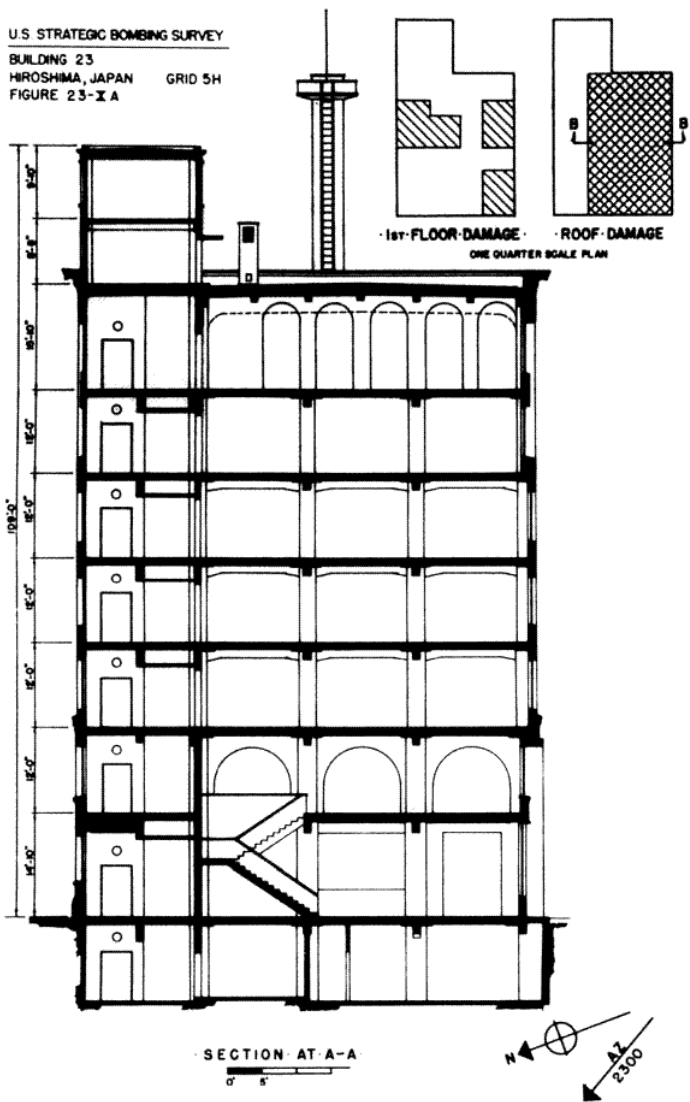
NP-3041

# HIROSHIMA SCHOOL CHILDREN

# WORK PARTIES DISTRIBUTION



U.S. STRATEGIC BOMBING SURVEY  
BUILDING 23  
HIROSHIMA, JAPAN GRID 5H  
FIGURE 23-XA



## U. S. STRATEGIC BOMBING SURVEY

### PHYSICAL DAMAGE DIVISION

Building No.: 23. Coordinates: 5H. Distance from (GZ): 1,200; (AZ); 2,300.

NAME: Fukoku Building.

#### CONSTRUCTION AND DESIGN

Type: Steel core reinforced-concrete frame.

Number of stories: 7 and basement. JTG class: E1.

Roof: Reinforced-concrete beam and slab (steel core).

Partitions: Reinforced concrete.

Walls: Reinforced concrete, stone trim.

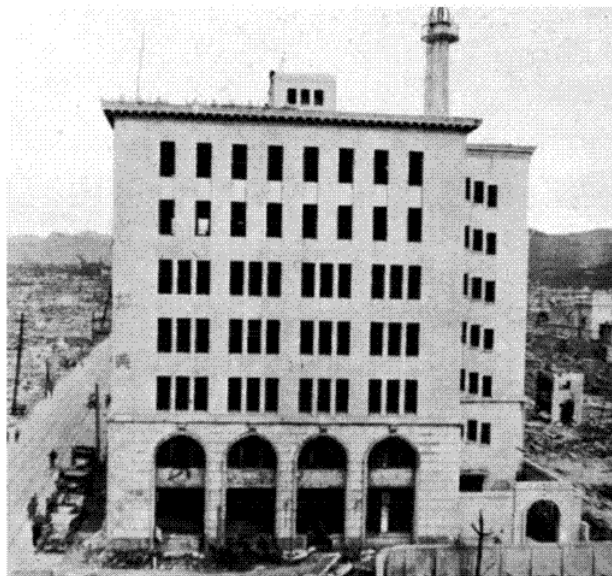
Floors: Reinforced concrete, wood finish.

Framing: Reinforced concrete.

Window and door frames: Metal. Ceilings: Metal lath and plaster.

Condition, workmanship, and materials:

Compare with usual United States buildings:



Above: Hiroshima had few modern Western-standard concrete buildings and they survived with relatively minor damage. The 50% casualty rate for the unwarned people of Hiroshima in concrete buildings occurred at just 0.12 mile from ground zero, compared to 1.3 miles for school students outside clearing firebreaks, many of whom – in survivor accounts – actually moved out of life-saving shadows and into an unobstructed radial line of sight in order to watch the B-29 aircraft when it dropped the bomb! The ratio of these median lethal areas is 120, so in concrete buildings the overall casualty rate is 120 times lower than for people standing outside without any shadowing. The burned out areas were filled with overcrowded wooden frame buildings, **containing no fire sprinkler systems (unlike modern city buildings) but containing now-long-obsolete breakfast (8:15 am) charcoal braziers along with bamboo and paper frame furnishings which were blown over by the blast winds and caused the wooden buildings mostly burned down when the firestorm peaked 2-3 hours later (after the evacuation, as proved by survival rate data of 50% for concrete buildings at just 0.12 mile from ground zero)**. Survivors in concrete buildings successfully used water buckets to put out burning firebrands blown into windows from the “firestorm” of wooden burning houses outside, which peaked at 2-3 hours after the bomb (source: USSBS report 92, vol 2). CND-type propaganda falsely uses the 19% humidity (DASA-1251) 1953 *Encore* Nevada desert test ignition data to claim the firestorm was instantaneous with the thermal flash. The actual humidity in Hiroshima when the bomb fell was 80%, over four times greater than in the 1953 Nevada test (table VI of William E. Loewe, Lawrence Livermore National Laboratory report

UCRL-90258, 1983). **Modern cities have taller concrete buildings which oscillate more in blast waves, absorbing energy from the blast wave and thereby attenuating it as it diffracts around them, because energy is conserved.**

Volume 2, Issue 3 of DTRIAC's (U.S **D**efense **T**hreat **R**eduction **I**nformation **A**nalysis **C**entre) journal, *The Dispatch*, 2013 is now available, and has several highly relevant articles on the effects of nuclear detonations air blast effects in urban areas, a subject whose origins go back to WWII when Dr William Penney determined that the air blast overpressure in Hiroshima and Nagasaki decayed faster with distance than in the unobstructed Maralinga and Nevada deserts during nuclear tests, due to the irreversible loss of blast energy from the Mach front as it causes damage. The energy taken out of the blast wave by a "reflecting" wall is product of the applied force (net pressure multiplied by area) and the distance the wall moves in the direction of the applied force. If the wall collapses, the energy acquired by the wall fragments (the kinetic energy of the debris) is taken out of the blast wave. Energy must be conserved!

Energy is removed from the blast wave by the following processes when the blast damages a building:

**1. SEISMIC WAVES WITHIN THE BUILDING MATERIAL.** Some of the blast energy is transformed into a seismic wave in the concrete or steel of the building material, similar to a ground shock wave. This is however only a relatively small use of blast energy (for the reasons that the article above points out).

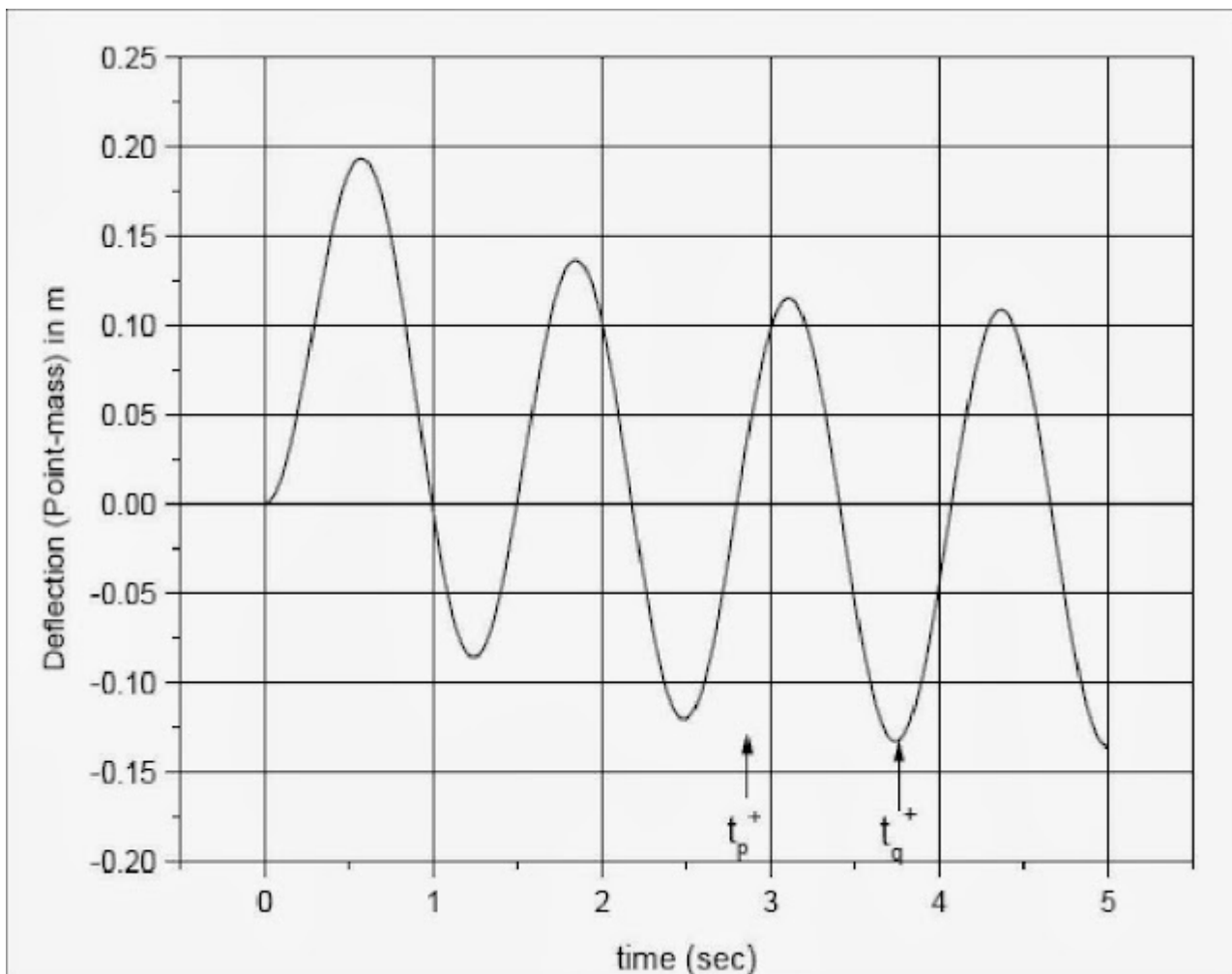
**2. DAMAGE TO BUILDING.** Breaking the thick large glass windows and wall panels of modern city buildings absorbs some blast wave energy (quite apart from the seismic coupling mentioned above). This energy is used in breaking the chemical bonds in the materials, like the crystalline lattice of the glass. This energy ends up as a small rise in temperature of the debris.

**3. KINETIC ENERGY OF DEBRIS ACCELERATED BY THE BLAST WINDS.** Once windows are broken, the winds behind the blast front accelerate the fragments to some extent. The peak wind velocity behind a 1 psi peak overpressure blast wave is 40 miles per hour, but the blast wave has passed at supersonic velocity before the debris has been accelerated to 40 mph. Nevertheless, this can be very important in absorbing the energy of the drag or dynamic pressure of the blast wave. (Blast walls, for instance, work by deflecting and stopping the blast winds. If a building wall survives the blast wave, it does the same job of stopping the blast winds/dynamic pressure and has a shielding effect.).

**3. ENERGY OF OSCILLATION OF BUILDING AS A WHOLE.** (See graph below from Professor Bridgman's 2001 unfortunately limited distribution book on the physics of nuclear weapons effects.) Apart from the energy used in sending a seismic wave through the building, and apart from the energy used in breaking doors and windows or panels and apart from the energy used in accelerating the resulting debris fragments, there is another use of energy that absorbs energy from the blast



wave: this is the oscillation of the building as a whole. The whole building oscillates like a massive tuning fork, at its resonate frequency, after being hit by the blast loading. The amplitude of the blast wave determines the amplitude of the oscillation of the centre of mass of the building. (If the oscillations lead to forces beyond the strength of the building, as at extremely high peak overpressures, some of the upper floors could be broken off, as occurred during some very powerful nuclear weapon tests on multistory concrete buildings which had been located near ground zero in several multimegaton bursts at Bikini Atoll, Operation Hardtack in 1958.)



*BRIDGEMAN (INTRODUCTION TO THE PHYSICS OF NUCLEAR WEAPONS EFFECTS, 2001) CONSIDERS A BUILDING WITH AN EXPOSED AREA OF 163 SQUARE METRES, A MASS OF 455 TONS AND NATURAL FREQUENCY OF 5 OSCILLATIONS PER SECOND, AND FINDS THAT A PEAK OVERPRESSURE OF 10 PSI (69 KPA) AND PEAK DYNAMIC PRESSURE OF 2.2 PSI (15 KPA) AT 4.36 KM GROUND RANGE FROM A 1 MT AIR BURST DETONATED AT 2.29 KM ALTITUDE, WITH OVERPRESSURE AND DYNAMIC PRESSURE POSITIVE DURATIONS OF 2.6 AND 3.6 SECONDS, RESPECTIVELY, PRODUCES A PEAK DEFLECTION OF 19 CM IN THE BUILDING ABOUT 0.6 SECOND AFTER SHOCK ARRIVAL. THE PEAK DEFLECTION IS COMPUTED FROM BRIDGMAN'S FORMULA ON P. 304: DEFLECTION AT TIME T,*



**$X_T = [A/(FM)] \int \sin(FT) (P_T + C_D Q_T) dt$  METRES,**

WHERE **A** IS THE CROSS-SECTIONAL FACE-ON AREA OF THE BUILDING FACING TO THE BLAST (E.G., 163 SQUARE METRES), **F** IS THE NATURAL FREQUENCY OF OSCILLATION OF THE BUILDING (E.G., 5 HZ), **M** IS THE MASS OF THE BUILDING, **P<sub>T</sub>** IS THE OVERPRESSURE AT TIME **T**, **C<sub>D</sub>** IS THE DRAG COEFFICIENT OF THE BUILDING TO WIND PRESSURE (**C<sub>D</sub>** = 1.2 FOR A RECTANGULAR BUILDING), AND **Q<sub>T</sub>** IS THE DYNAMIC PRESSURE AT TIME **T**.

THIS 19 CM COMPUTED MAXIMUM DEFLECTION ALLOWS US TO ESTIMATE HOW MUCH ENERGY IS PERMANENTLY AND IRREVERSIBLY ABSORBED FROM THE BLAST WAVE BY A BUILDING AND TRANSFORMED INTO SLOW-MOVING (RELATIVE TO THE SHOCK FRONT) DEBRIS WHICH FALLS TO THE GROUND AND IS QUICKLY STOPPED AFTER THE BLAST HAS PASSED IT BY: **E = FX**, WHERE **F** IS FORCE (I.E., PRODUCT OF TOTAL PRESSURE AND AREA) AND **X** IS DISTANCE MOVED IN DIRECTION OF FORCE DUE TO THE APPLIED FORCE FROM THE BLAST WAVE. IF THE EFFECTIVE LOADING PRESSURE (OVERPRESSURE AND DYNAMIC PRESSURE COMBINED) ON THE BUILDING FOR THE FIRST 0.5 SECOND IS EQUAL TO 12 PSI (83 KPA) THEN THE MEAN FORCE ON THE BUILDING DURING THIS TIME IS 13 MILLION NEWTONS, AND THE ENERGY ABSORBED BY THE BUILDING FROM THE BLAST WAVE (REDUCING THE POTENTIAL OF THE BLAST TO CAUSE FURTHER DESTRUCTION AT GREATER RADIAL DISTANCES) IS SIMPLY:

$$E = FX = 13,000,000 * 0.19 = 2.6 \text{ MJ.}$$

THIS IS INTERESTING BECAUSE WE HAVE ALREADY DISCUSSED EARLIER THE PROBLEM THAT PENNEY FOUND A LARGE ATTENUATION IN PEAK OVERPRESSURES DUE TO THE IRREVERSIBLE ENERGY LOSS VIA DAMAGE DONE AT HIROSHIMA AND NAGASAKI. ALTHOUGH YOU MIGHT EXPECT SOME OVERPRESSURE TO DIFFRACT DOWNWARDS AS THE ENERGY IS DEPLETED NEAR GROUND LEVEL, THE EFFECT OF THE FALL IN AIR DENSITY WITH INCREASING ALTITUDE WILL TEND TO PREVENT THIS. IN ANY CASE, ONLY BLAST OVERPRESSURE DIFFRACTS. DYNAMIC PRESSURE IS A DIRECTIONAL (RADIAL) WIND EFFECT WHICH DOES NOT DIFFRACT

**DOWNWARDS. HENCE, BLAST ENERGY LOSS FROM THE WIND (DYNAMIC) PRESSURE CANNOT BE COMPENSATED FOR BY DOWNWARD DIFFRACTION. THIS IS WHY SHALLOW OPEN TRENCHES PROVIDED PERFECT PROTECTION AGAINST WIND DRAG FORCES AT NUCLEAR TESTS IN THE 1950S, ALTHOUGH THE OVERPRESSURE COMPONENT OF THE BLAST DID DIFFRACT INTO THEM: THE WIND JUST BLOWS OVER THE TOP OF THE TRENCH WITHOUT BLOWING DOWN INTO IT!**

Above: Bridgman's 2001 book *The Physics of Nuclear Weapons Effects* calculated the time-dependent oscillation of the centre of mass of a typical city building, finding oscillations *much* larger for the moderate damage region (say 10 psi peak overpressure from a 1 megaton surface burst) than the paltry 1 cm quoted wrongly in the paper above (buildings actually move 1 cm from natural earth tremors and normal wind, without damage). In Bridgman's example above, which ignores damping of the oscillations (damping is not significant for the first full oscillation), the initial displacement is nearly 20 cm, not merely 1 cm. If a force (i.e. net loading pressure times area),  $F$  moves the centre of mass of a building distance  $x$ , the energy absorbed by the building is simply  $E = Fx$ . There is nothing complex here. You don't need to obfuscate the physics by comparing the density of a building to the density of the air. This kind of silly density comparison is first made by Dr Harold Brode in his 1968 paper "Review of Nuclear Weapons Effects" in *Annual Review of Nuclear Science* v18, pp153-202, in order to try to justify why about 15% of the energy of a megaton surface burst was coupled into the ground (rather than the air), by pointing out that air is about a thousand times less dense than soil.

The acoustic impedance of air compared to soil is pretty irrelevant because the 15% figure is – as Brode explains later in his paper – nothing to do with air blast but actually due to the half of the dense metal case shock of the weapon (the half moving downward) burying itself in the ground and causing the cratering effects and ground shock. The ratio of densities of air and building material is irrelevant to the energy coupled into the building. This ratio would only matter if you are calculating the reflection of a sound wave or weak blast wave from a large homogeneous, non-breaking mass of the material. I.e., it is useful for estimating the energy absorbed (transformed from sound waves into weak seismic waves) by a concrete ground surface when a sound wave hits the ground. This is not the only use of energy anyway, because as we have explained, the seismic wave coupled into a building from a blast wave reflection is only one mechanism by which the building absorbs blast wave energy. Apart from a seismic wave being sent through the building, blast energy is also absorbed through the building suffering cracks to glass and panels, the blast wind energy used to accelerate fragments of the resulting debris, and the overall vibration of the whole building which can absorb lots of blast energy!

Glasstone's nuclear effects handbook, *The Effects of Atomic Weapons*, 1950, on page 57 has a section written by John von Neumann and Fredrick Reines of Los Alamos (it is attributed to them in a

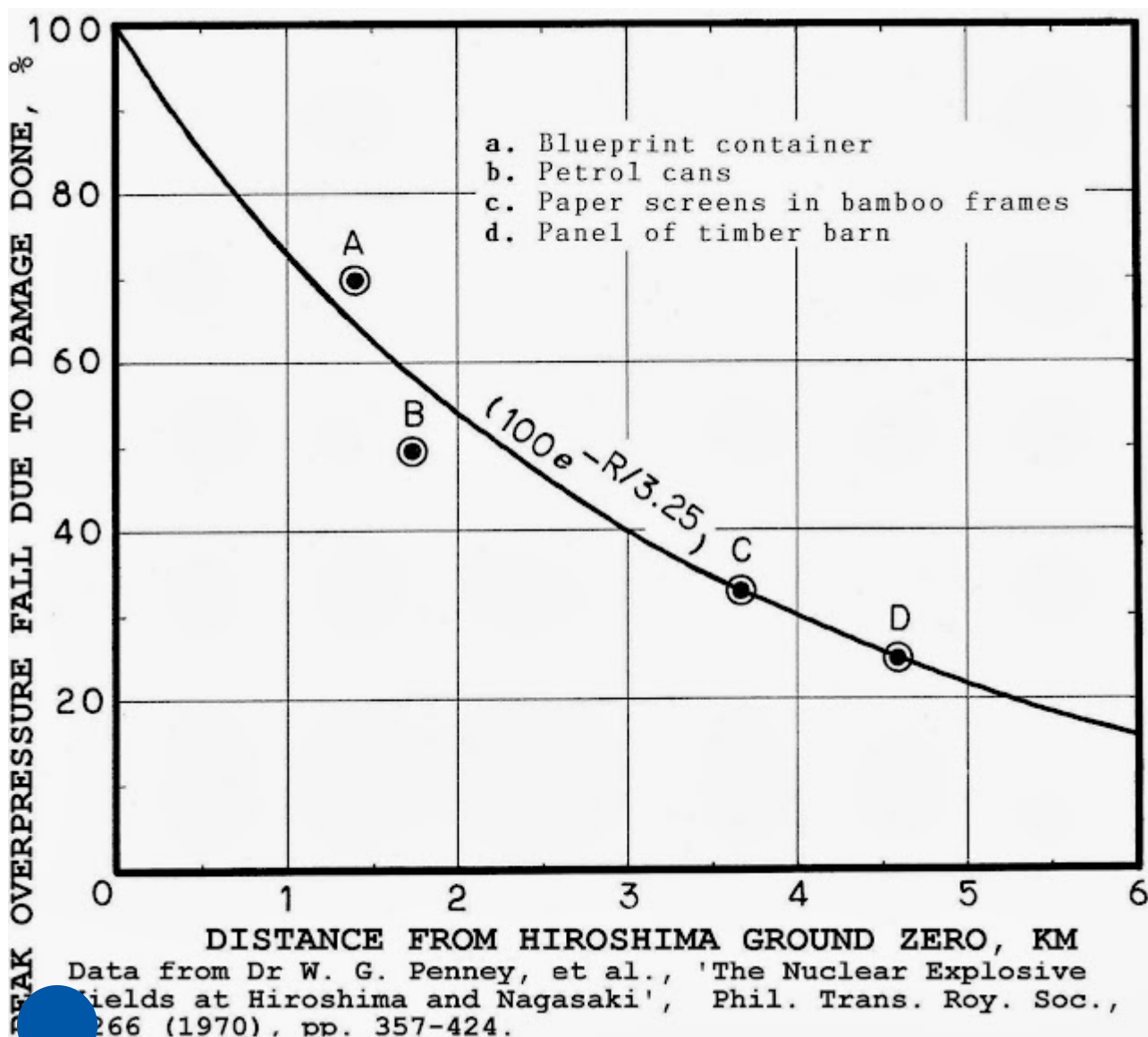


footnote) stating factually:

*"... THE STRUCTURES ... HAVE THE ADDITIONAL COMPLICATING PROPERTY OF NOT BEING RIGID. THIS MEANS THAT THEY DO NOT MERELY DEFLECT THE SHOCK WAVE, BUT THEY ALSO ABSORB ENERGY FROM IT AT EACH REFLECTION.*

*"THE REMOVAL OF ENERGY FROM THE BLAST IN THIS MANNER DECREASES THE SHOCK PRESSURE AT ANY GIVEN DISTANCE FROM THE POINT OF DETONATION TO A VALUE SOMEWHAT BELOW THAT WHICH IT WOULD HAVE BEEN IN THE ABSENCE OF DISSIPATIVE OBJECTS, SUCH AS BUILDINGS."*

This was removed from future editions. This isn't speculative guesswork: it's down to the conservation of energy. Penney published the experimental proof from Hiroshima and Nagasaki in 1970, after being made a Lord and FRS:



Cumulative irreversible peak overpressure reduction in the Hiroshima shock front as it propagated and diverged, due to energy used in damaging wooden buildings, calculated from accurate natural blast gauges\*

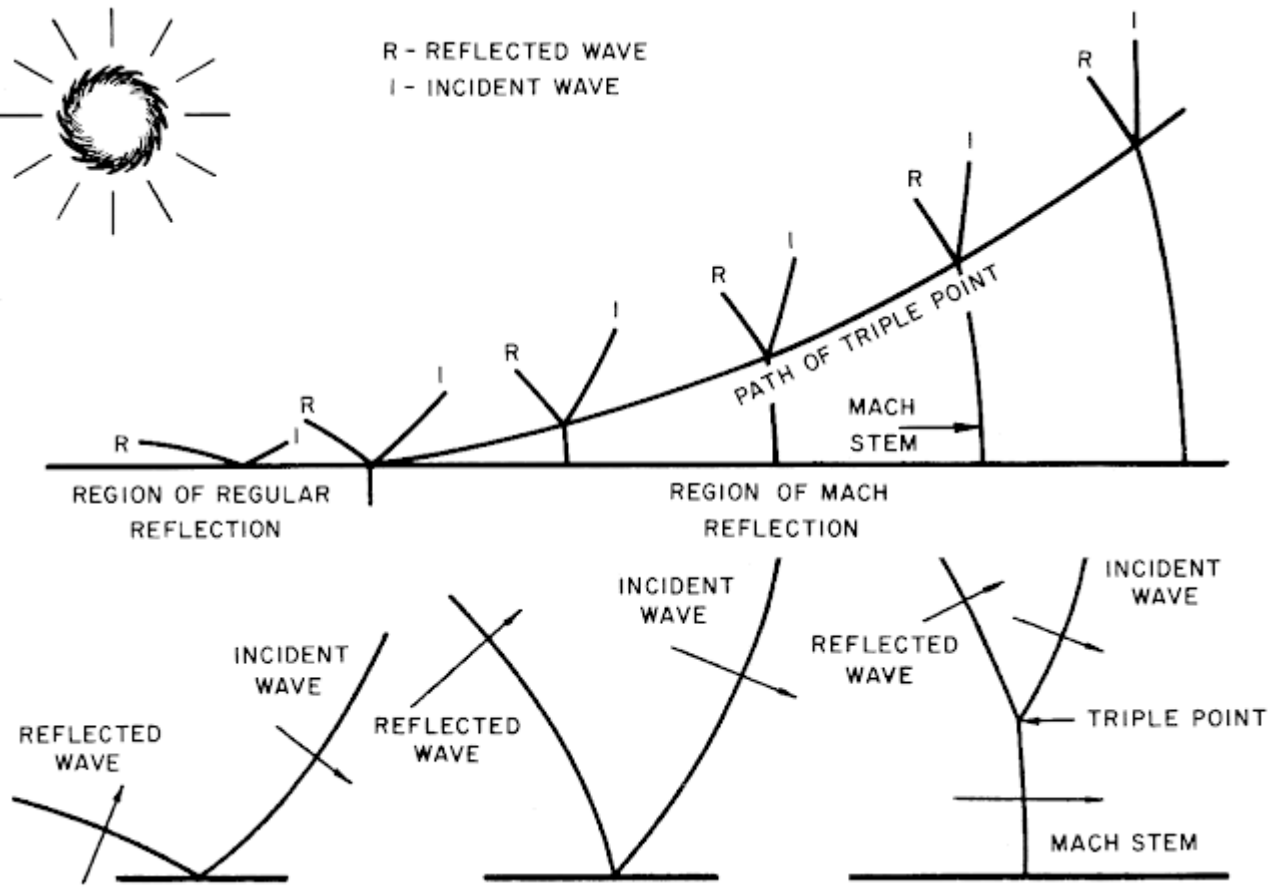
<i>Gauge used to determine peak overpressure</i>	<i>Ground range</i>	<i>Reduction</i>
Bent lightning conductor	940 m	7 %
Overturned memorial stones	1,310 m	14 %
Partially collapsed blue-print container	1,400 m	30 %
Partially collapsed petrol cans	1,740 m	50 %
Broken paper screens and bamboo frames	3,660 m	66 %
Broken panel of timber barn	4,570 m	75 %

\* Hiroshima was an air burst not a surface burst. Therefore, "regular" blast reflection (incident blast coming downwards on a slant path from the burst point, with little shielding, apart from the effects of tall buildings near ground zero, followed by a separate ground-reflected upward slanted blast wave) predominated for near ground zero, and "Mach reflection" (merged incident and ground-reflected blast, in a single horizontally-travelling vertical shock front) predominated at larger distances (overpressures below about 16 psi). Hence, in the graph plotted above we excluded Penney's two data points closest to ground zero, where regular reflection prevented the exponential attenuation from blast shielding effects from being cleanly observed. *In a ground surface burst in a city, Mach wave reflection occurs at all ranges, so the exponential attenuation law will be valid, and faster blast attenuation will occur for tall modern city concrete buildings than was observed in the predominantly low (1- and 2-story) wood-frame dwellings than covered most of Hiroshima.* The exact range to which "Mach reflection" occurs is dependent on the height of the target above ground zero, because the Mach front (merged incident and reflected blast waves) grows higher with increasing distance from ground zero. For an air burst, in tall buildings, regular reflection blast (separate incident and reflected blast waves) will hit the upper floors if they are above the height of the Mach stem, while the lower floors in the same building (within the Mach stem height) will only be subjected to a single Mach wave:





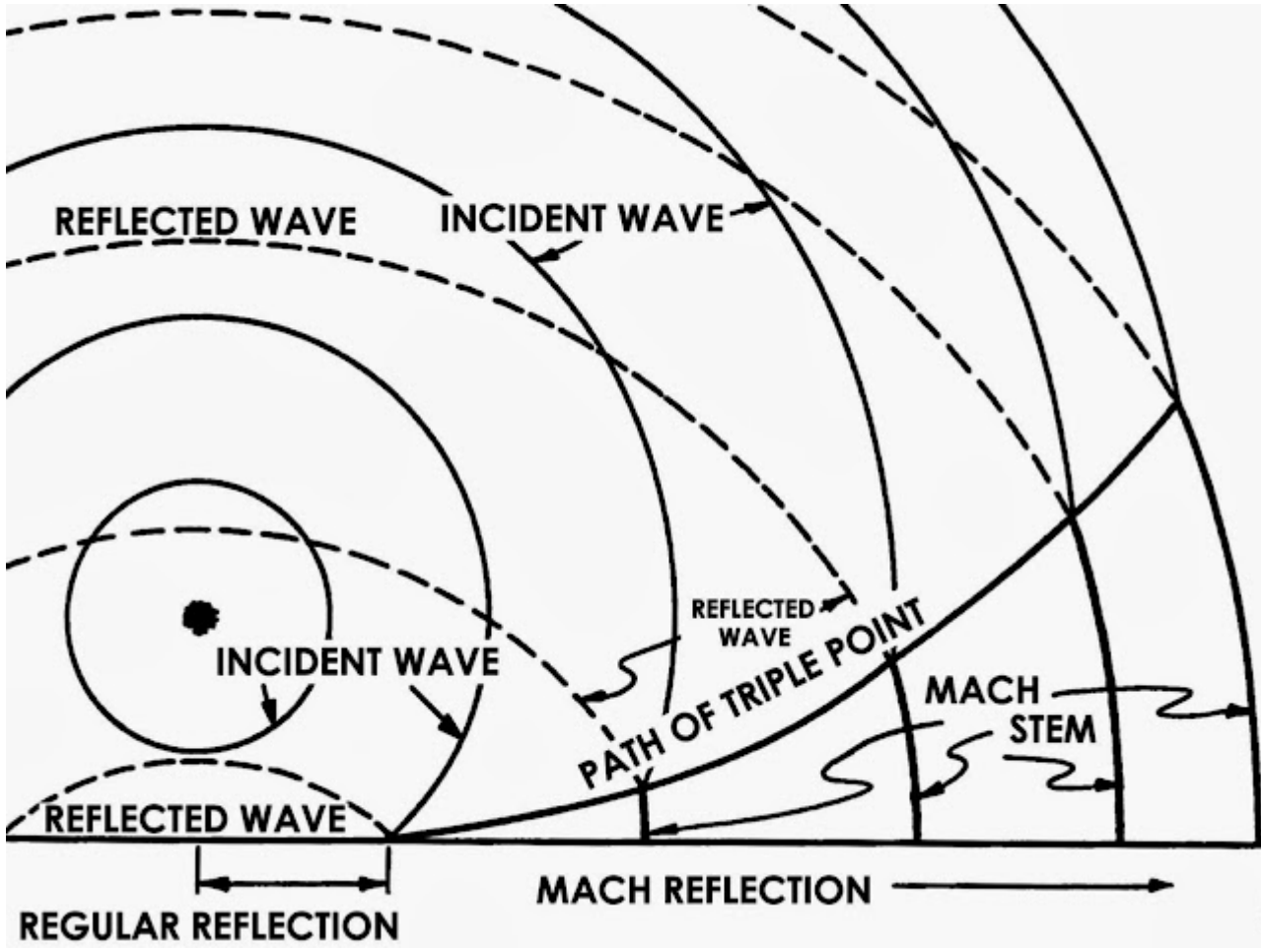
R - REFLECTED WAVE  
I - INCIDENT WAVE



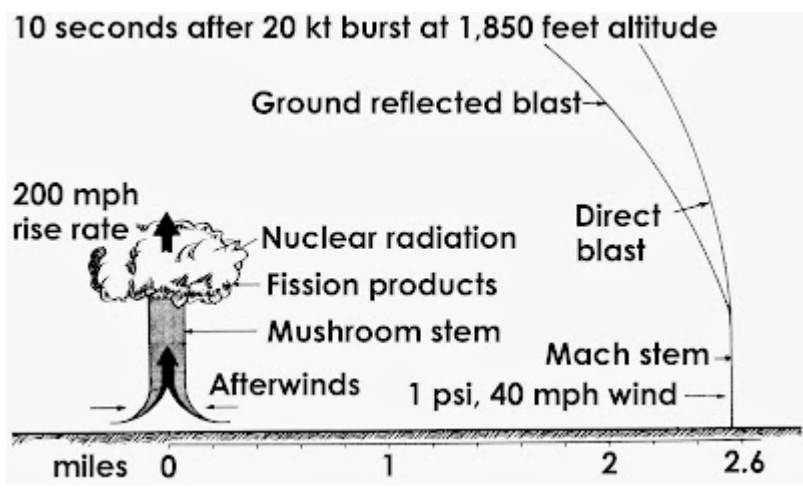
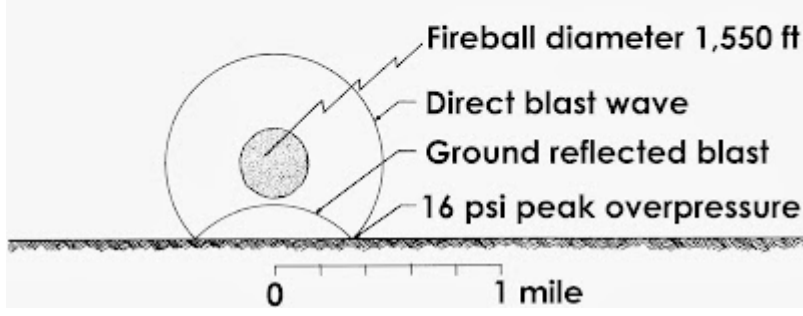
**Above:** for a 1 kt air burst at height  $H$  feet, the Mach stem height at ground distance  $R$  feet is given by approximately  $(R - H)^2 / (R + 7.4 \times 10^{-5} H^3)$  feet  $\pm 20\%$ , for distances  $R > H$ . (Our equation is based on the Mach stem height graphs given in TM 23-200 and DNA-EM-1. This is Nevada desert data for unobstructed terrain. This equation thus ignores terrain and building effects on the development of the Mach stem.)







1.25 seconds after 20 kt burst at 1,850 feet altitude: direct and ground reflected blast waves begin to fuse into a Mach stem, 0.35 mile from ground zero



They had earlier supported some experiments at the Atomic Weapons Research Establishment by W. Horsfold, published in the 1957 secret report *The Effects of Shielding a Building from Atomic Blast*

by Another of the Same Size and Shape, AWRE-E4/57 (declassified only in May 1985) and further experiments in the report AWRE-E8/57. Each individual building causes only a trivial net reduction in the peak overpressure (1-5 %), but after some tens or hundreds of houses in any radial line from ground zero have been totalled, the blast wave is seriously depleted in energy. Hence, predictions of blast damage using desert nuclear test data with the cube-root scaling law are massive exaggerations.

### Defense Threat Reduction Information Analysis Center

#### Modeling Nuclear Blast in Urban Terrain with NucFast (continued)

To describe the blast parameters from multiple shock waves, nonlinear summation rules (called the LAMB Addition Rules) are applied using the following conservation equations of mass, momentum and energy.

Conservation of Mass

$$\rho = \rho_0 + \sum_{i=1}^n \Delta\rho_i$$

Conservation of Momentum

$$\rho\vec{u} = \sum_{i=1}^n (\rho_0 + \Delta\rho_i)\vec{u}_i$$

Conservation of Energy

$$P = P_0 + \sum_{i=1}^n [\Delta P_i + 0.5(\rho_0 + \Delta\rho_i)|\vec{u}_i|^2] - 0.5 \frac{|\rho\vec{u}|^2}{\rho}$$

In these equations,  $\rho_0$  is the ambient density at the point of interest,  $P_0$  is the ambient pressure at the point of interest,  $\Delta\rho_i$  is scaled shock overdensity of the  $i_{th}$  burst,  $\Delta P_i$  is the scaled shock side-on overpressure of the  $i_{th}$  burst,  $\vec{u}_i$  is the scaled shock velocity of the  $i_{th}$  burst,  $\rho$  is the combined shock density,  $P$  is the combined shock pressure, and  $\rho\vec{u}_i$  is the combined shock momentum.

ABOVE: Modeling Nuclear Blast in Urban Terrain with NucFast, an article by Charles Needham and Joseph Madrigal, Applied Research Associates, Inc., in the latest DTRIAC Dispatch issue, gives the blast wave conservation laws. It is totally uncontroversial that blast waves do use up energy when causing damage, and this reduces the pressure in the blast wave to values below the data measured over unobstructed surfaces in desert and ocean nuclear tests.

**26 October 2013 update: the "Rankine-Hugoniot ideal condition" equations relating wind speed, dynamic pressure and reflected peak pressure are totally misleading**

As for the precursor region, or for dynamic pressure in foxholes or behind obstacles shielded from the radial blast winds and dynamic pressure, there are no reliable "Rankine-Hugoniot" equations for urban conditions, and it is vital to realize that whenever a building reflects a blast wave, the increase in the pressure on the building is not due to magical non-conservation of energy, but is simply a physical result of *stopping the blast winds and reversing the direction of the blast wave (so that the front of the wave collides with the rest of the wave as it begins to reverse direction, allowing the pressure to add)*.

The increase of the free-field overpressure when the blast wave reflects from the front face of a building at normal incidence (head on to the blast) is only possible if the blast *is reflected ideally*. If the blast *is reflected ideally*, the building is totally undamaged! You can't have your cake and eat it! If you want to model ideal reflections, there is no damage done by the blast. If there is damage done, there are no ideal reflections.

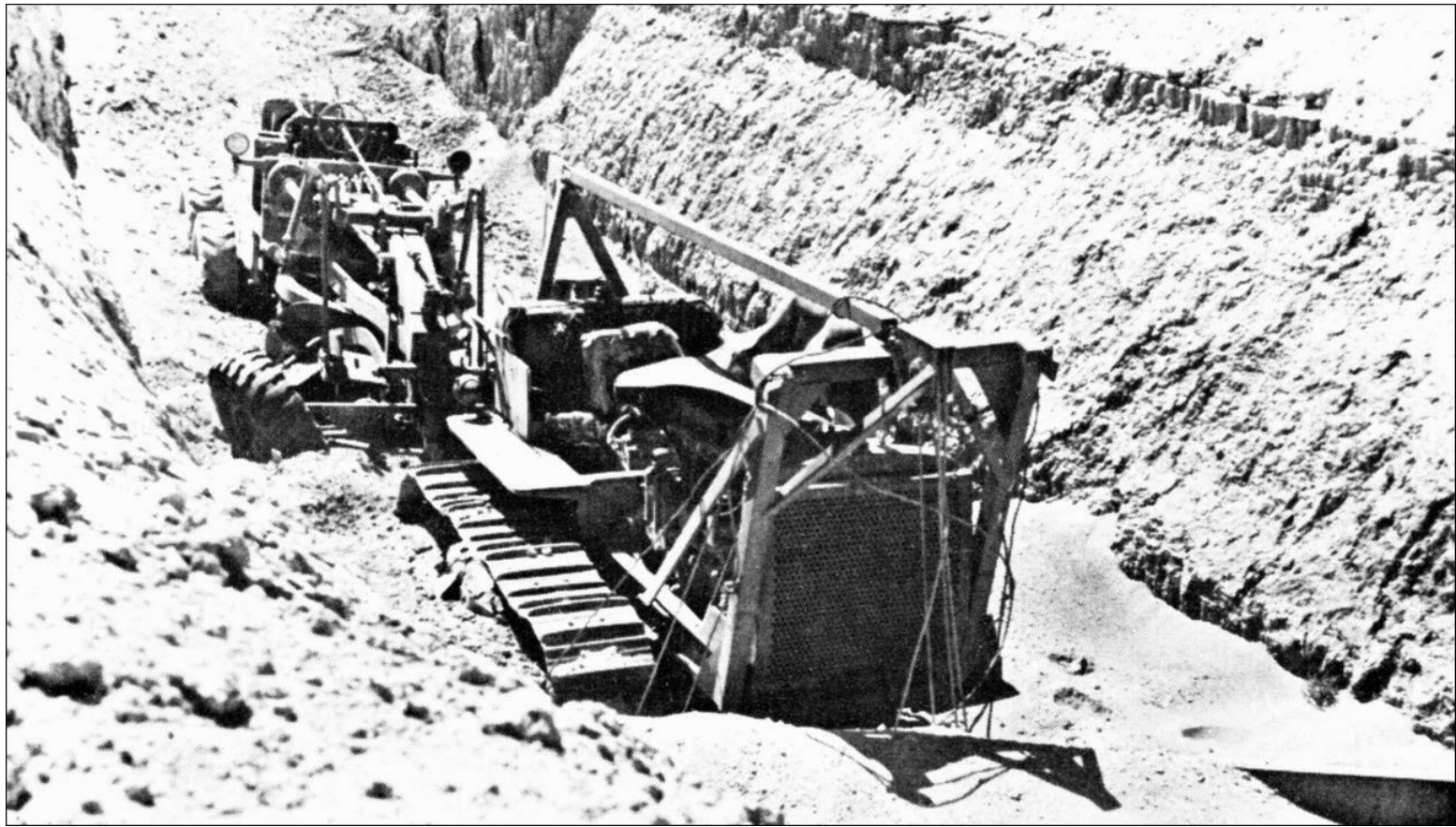
If windows cover most of the surface area of the building and they shatter, there is no ideal reflection, energy is absorbed in shattering the window, and the blast winds or dynamic pressure are also depleted in energy by the amount of kinetic energy which the glass fragments pick up from the blast wind pressure subsequent to the shattering.

The acoustic analogy in a city compared to a desert is useful to understanding what happens in the low pressure region where dynamic (wind) pressure is insignificant. Sound and wind are both attenuated more in a built up modern city than they are over open desert-type (nuclear test) terrain. Sure, sound waves diffract around buildings, just as they diffract into open foxholes or around blast walls. But the whole point is quantitative. The overpressure in the diffracted sound or blast is reduced by obstacles, since they absorb energy, and don't diffract energy ideally or completely. (This is analogous to scattered radiation: sure, some radiation is scattered in all directions, but it's intensity is lower than the unscattered radiation because some previously downward-travelling direct radiation gets scattered upwards and is thus lost in the scattering process.)

If you stand in a foxhole, behind a blast wall or a strong building which survives the blast, you are sheltered from the blast winds and drag effect or dynamic pressure of the blast wave, although some (reduced) overpressure will diffract in to you. This is not generally understood, and although Dolan's secret EM-1 contains a useful explanation on blast shielding, Glasstone and Dolan's unclassified *Effects of Nuclear Weapons* not only omits this blast shielding fact, but also misleadingly conflates ideal condition equations with city conditions, on the absurd basis that a precursor does not form over concrete.







Above: the Teapot-Met Nevada nuclear test in 1955 subjected bulldozers and road graders to 30 psi peak overpressure (photo was taken AFTER the blast!), proving blast wind shielding by a shallow-open trench. Similar equipment on open desert without protection was blown along and wrecked. (S. Glasstone, *Effects of Nuclear Weapons*, 1957.)

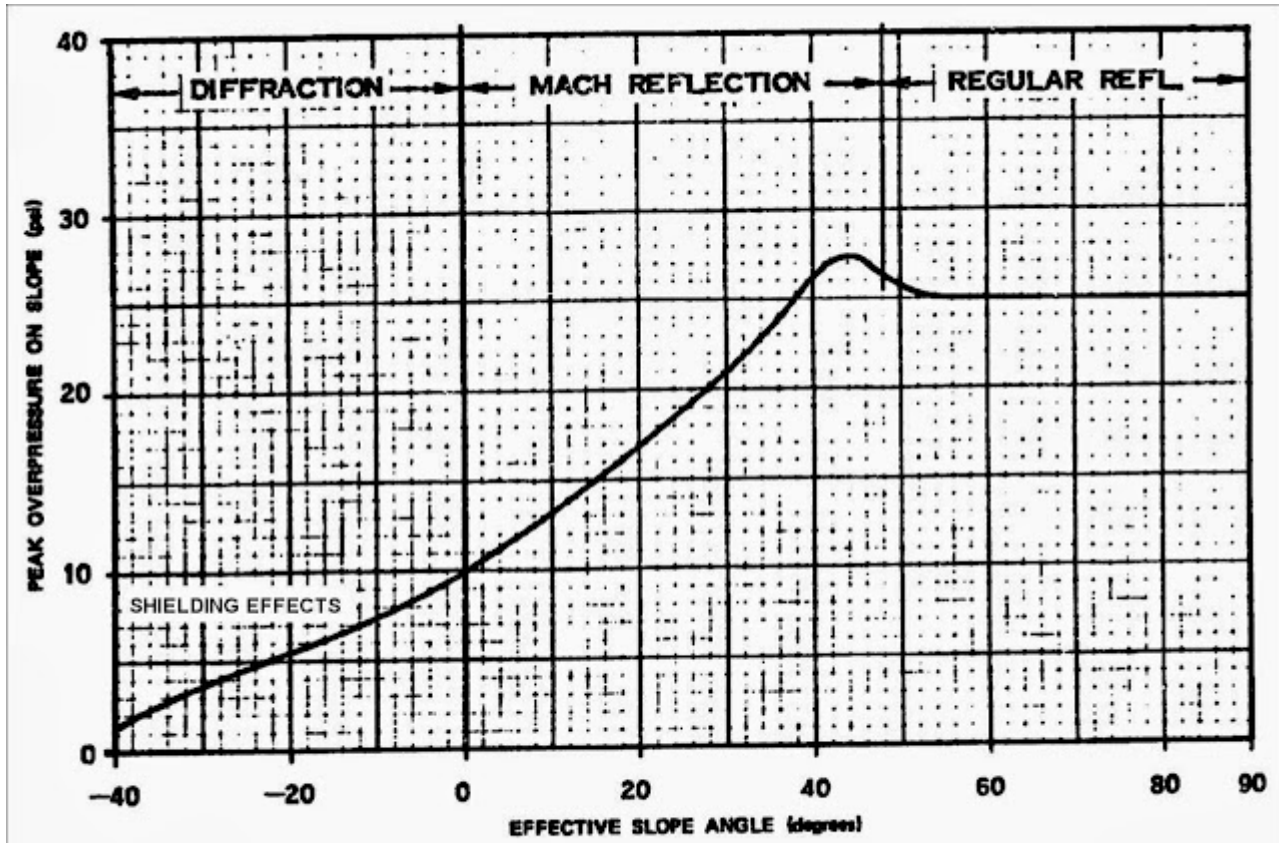


Figure 2-53. Peak Overpressure Produced on a Slope by a 10-psi Incident Mach Stem as a Function of a Slope Angle

**Above:** shielding of overpressure by blast diffraction, from Dolan's secret DNA-EM-1. If you are in a trench, foxhole, or behind a blast wall, the overpressure that diffracts in to you is reduced below the free-field value. This vital civil defense blast shielding evidence is excluded or is obfuscated (made unclear) in Glasstone's unclassified book. Additionally, as DNA-EM-1 illustrates, the blast winds (dynamic pressure) which cause the greatest threat from being blown along and from debris impacts, are excluded by simply being in an open trench or foxhole. The wind just blows over the top, without entering. You don't need an air-tight blast door to reduce blast effects. Any baffle or "blast wall" will reduce both the overpressure and dynamic pressure (drag and debris/missiles) dangers. People need to know this for self-protection.

At the 1955 *Teapot-Met* nuclear weapon test in Nevada, road graders and bulldozers were exposed both outdoors and in shallow open trenches at a distance where the free-field peak overpressure was 30 psi. The results are published in photo form in the 1957 edition of *The Effects of Nuclear Weapons*. The bulldozers and road graders in shallow open trenches were essentially unharmed because the blast winds blew over the top without entering, but those in the open (in unobstructed desert, with no protection or shielding by city buildings) were rolled along and wrecked by the blast wind drag. The same 1957 edition of *The Effects of Nuclear Weapons* contains photos showing blast walls (simply walls that are prism shaped, wider at the base than at the top to reduce the risk of being shattered or overturned by blast, and the consequences if overturning occurs) that protected transformers at an electric substation 0.85 mile from ground zero in Nagasaki after the nuclear air burst there.





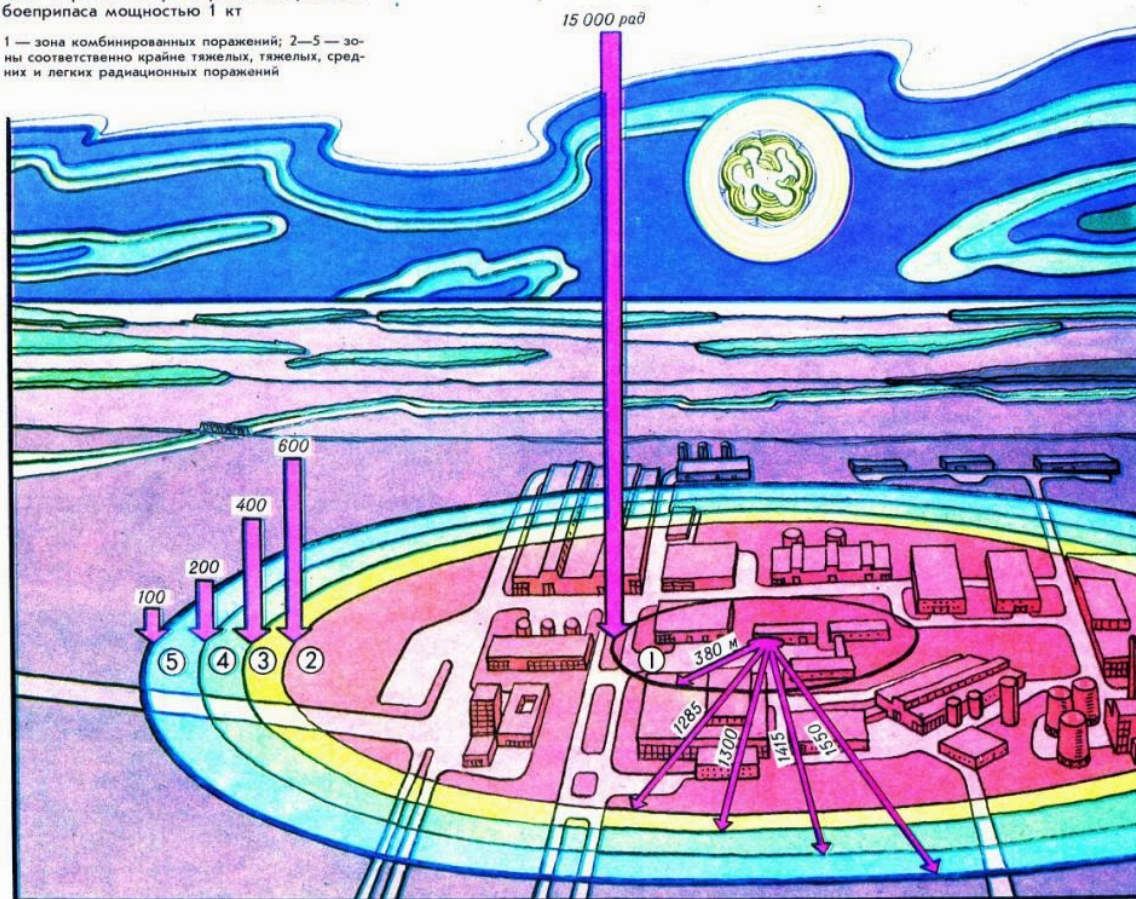
# НЕЙТРОННОЕ ОРУЖИЕ И ОСОБЕННОСТИ ЗАЩИТЫ ОТ НЕГО

НЕЙТРОННОЕ ОРУЖИЕ — ЭТО НЕЙТРОННЫЕ БОЕПРИПАСЫ И СРЕДСТВА ДОСТАВКИ ИХ К ЦЕЛИ. НЕЙТРОННЫЙ БОЕПРИПАС — ТЕРМОЯДЕРНЫЙ ЗАРЯД СВЕРХМАЛОЙ

МОЩНОСТИ (0,5—2,0 кт), ДЕЙСТВИЕ ЕГО ОСНОВАНО НА РЕАКЦИИ СИНТЕЗА ЯДЕР ВОДОРОДА — ДЕИТЕРИЯ И ТРИТИЯ

Очаг поражения при взрыве нейтронного боеприпаса мощностью 1 кт

1 — зона комбинированных поражений; 2—5 — зоны соответственно крайне тяжелых, тяжелых, средних и легких радиационных поражений

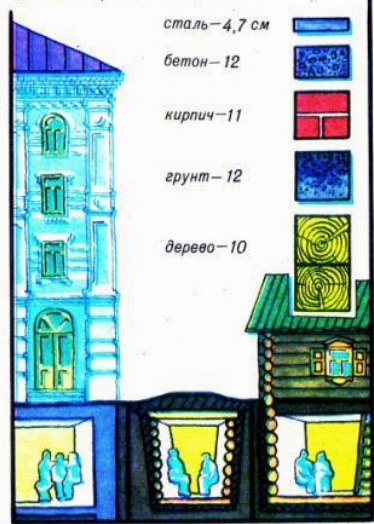


РАСПРЕДЕЛЕНИЕ ЭНЕРГИИ ВЗРЫВА НЕЙТРОННОГО И ЯДЕРНОГО БОЕПРИПАСА

Поражающий фактор	Энергия боеприпаса, %	
	нейтронного	ядерного
Ударная волна	40	50
Световое излучение	30	35
Проникающая радиация	25	5
Радиоактивное заражение	5	10

ЗАЩИТНЫЕ СВОЙСТВА МАТЕРИАЛОВ

Экспозиционную дозу радиации ослабляют вдвое материалы толщиной

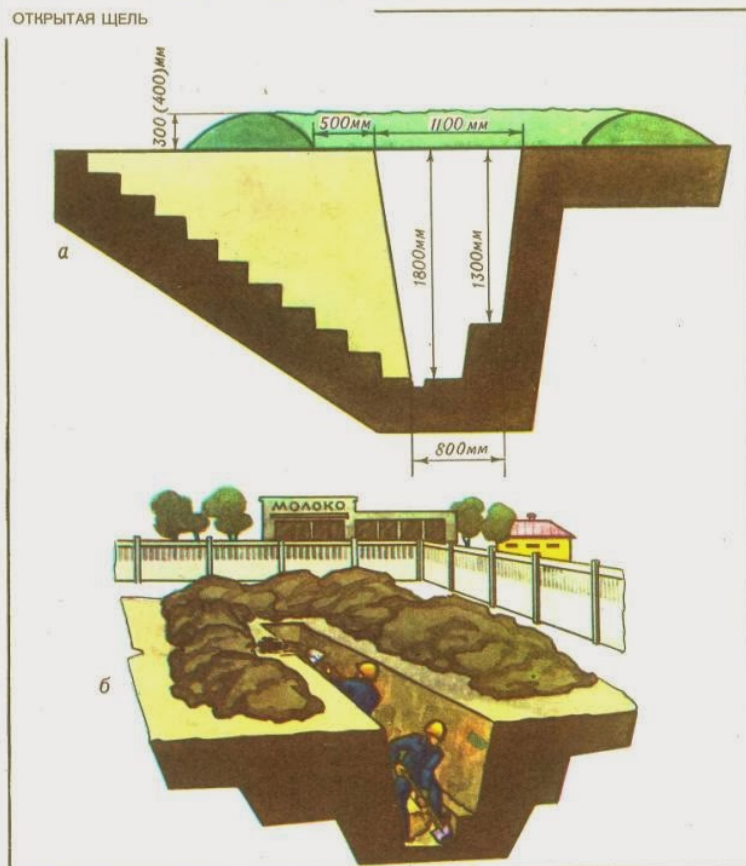




ПРОСТЕЙШИЕ УКРЫТИЯ ОСЛАБЛЯЮТ ВОЗДЕЙСТВИЕ УДАРНОЙ ВОЛНЫ И РАДИОАКТИВНОГО ИЗЛУЧЕНИЯ, ЗАЩИЩАЮТ ОТ СВЕТОВОГО ИЗЛУЧЕНИЯ И ОБЛОМКОВ РАЗРУШАЮЩИХСЯ ЗДАНИЙ, ПРЕДОХРАНЯЮТ ОТ ПО-

ПАДАНИЯ НА ОДЕЖДУ И КОЖУ РАДИОАКТИВНЫХ, ОТРАВЛЯЮЩИХ И ЗАЖИГАТЕЛЬНЫХ ВЕЩЕСТВ

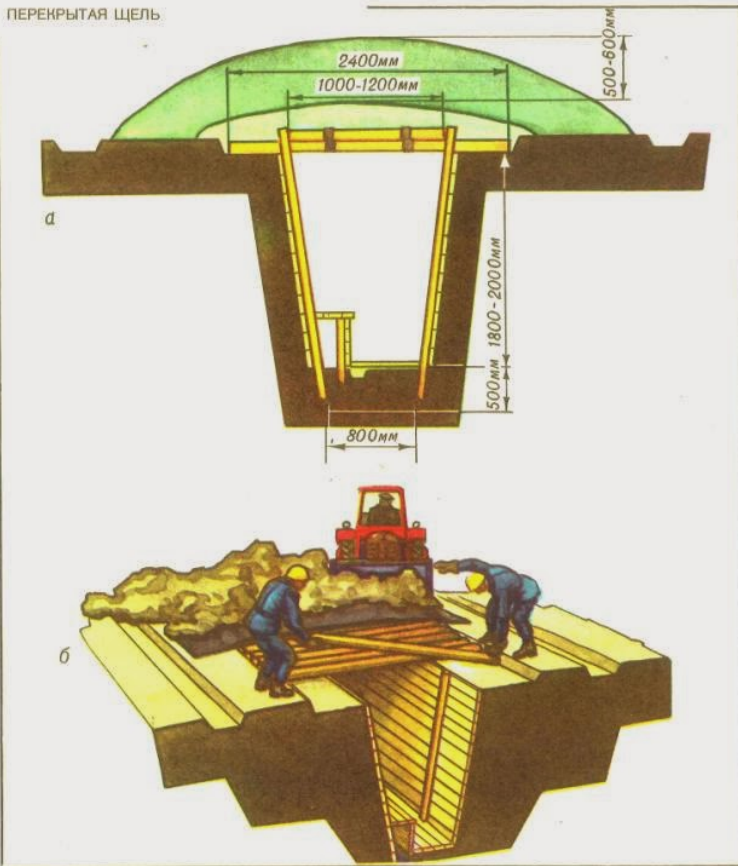
ОТКРЫТАЯ ЩЕЛЬ



а) схема щели; б) отрывка щели

ПРИ УГРОЗЕ НАПАДЕНИЯ ПРОТИВНИКА НАСЕЛЕНИЕ МОЖЕТ СВОИМИ СИЛАМИ СООРУЖАТЬ ИЗ ПОДРУЧНЫХ МАТЕРИАЛОВ ПРОСТЕЙШИЕ УКРЫТИЯ ТИПА ОТКРЫТЫХ, ПЕРЕКРЫТЫХ ЩЕЛЕЙ И ДР.

ПЕРЕКРЫТАЯ ЩЕЛЬ



а) схема щели; б) сооружение перекрытой щели с одеждой крутостей

Above: 1986 USSR civil defense posters showing how to protect against neutron bomb radiation and blast. The USSR had the temerity to fund its Moscow "World Peace Council" propaganda front to persuade communists in CND like Phil Bolsover to write nonsense like the CND book *Civil defence – The cruellest confidence trick*, which was the 1980 version of notorious 1930s anti civil defence scare-mongering propaganda, which massively exaggerated the gas bomb effects to sneer at civil defence, in support of deluded political strategies which the public liked (in the hope of avoiding war) but which weren't realistic. While doing this, the USSR was investing in realistic civil defense itself, which it had proof tested at its own nuclear weapons tests.

### Car crashes due to bright flashes

Culbert B. Laney's article on page 2 of *Dispatch* very usefully points out that the well-filmed and documented 15 February 2013 meteor strike over Chelyabinsk in Russia was a 470 kt TNT equivalent air burst at 15 miles altitude, 30 times the yield of Hiroshima according to Dr Peter Brown's Meteor Physics Group at the University of Western Ontario, Canada. It shattered over 100,000 square metres of glass in 3,000 buildings, cutting 1,500 people but killed nobody and apparently blinded nobody, despite facial injuries. The overpressures were so low that most of the glass injury was from falling glass fragments, not blast wind accelerated fragments. What is maybe more interesting however is the film from traffic cameras showing no panic of motorists on highways when the flash (visibly much brighter than the ambient sunlight) occurs: nobody panics and swerves, slams on

breaks, or accelerates needlessly. People simply close their eyes for the couple of seconds of very bright, noiseless light. No car accidents occur, unlike the popular terror-spreading propaganda which claims without evidence that people will panic in any soundless flash (ahead of the blast) and crash cars on highways (note that in a terrorist burst in a city, the shadowing effects of buildings and trees will prevent retinal burns to eyes, although the bright scattered light will still provide a useful duck and cover warning for those people near windows facing the burst who are at risk of glass fragments accelerated after the blast wave arrives subsequent to the noiseless flash):



ABOVE: dirt cheap countermeasures worked against blast. Earth cover was blown off this Anderson shelter in London during the 1940 Blitz. This damage to the shelter absorbed blast energy, permitting survival inside, just as car bumpers and "crumple zones" absorb impact energy and thus afford protection. Tables indoors offered similar protection against house collapse and flying debris.







Above: 20 July 1940 London Board of Education "duck and cover" school drill for air raids. The bigger the bomb, the bigger the average time between the light-velocity flash of the explosion and the arrival of the blast wave. It is a fact that 76.5% of kids ducking and covering in totally demolished houses survived in 2,340 V1 cruise missile attacks on London within 70 ft of the 1 ton TNT equivalent explosion (type A damage, complete collapse). This data, given in both the 1957 *Capabilities of Atomic Weapons* and the 1972 *Capabilities of Nuclear Weapons*, is proved by Dr Derman Christopherson's Confidential report RC-450, *Structural Defence*. Bigger yield explosions increase the average arrival time of the blast within the flattened area (for any given pressure, the arrival time increases in proportion to the cube-root of the explosion energy yield, i.e. it takes 10 times longer for 1 psi to arrive in a 1 megaton bomb than in a 1 kiloton bomb), and the thermal and initial nuclear radiation (due to hydrodynamic enhancement of fission product gamma rays, a blast effect on the average air density between bomb and target) are both delivered more slowly as the yield is increased, giving people more time to avoid most of the potential exposure by taking cover. As the original Secret-classified American *Handbook on Capabilities of Atomic Weapons* (AD511880L) admitted on page 81: "The large number of casualties in Japan resulted for the most part from the lack of warning."

In addition, key V1 effects data from Christopherson's *Structural Defence 1945* (Ministry of Home Security research report RC-450) proved that over 75% of people survived house collapse, given quick "duck and cover" under tables in WWII, a fact that was included in Table 6.1 in Confidential American manual TM 23-200 *Capabilities of Atomic Weapons*, 1957, and Table 10-1 in Secret



DNA EM-1  
PART I

DEFENSE NUCLEAR AGENCY EFFECTS MANUAL NUMBER 1

# CAPABILITIES OF NUCLEAR WEAPONS

1 JULY 1972

HEADQUARTERS  
Defense Nuclear Agency  
Washington, D.C. 20305

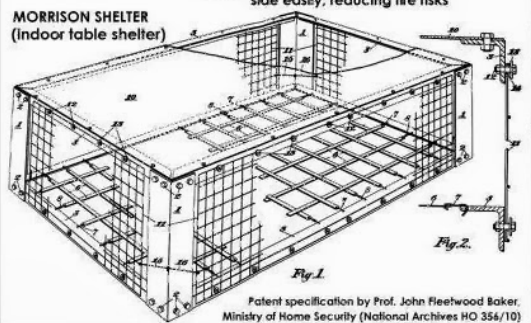
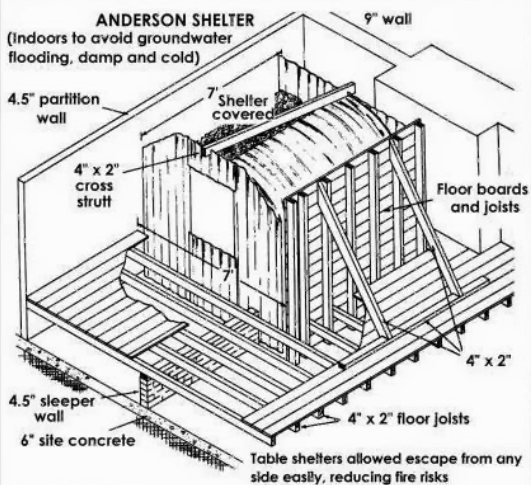


**Table 10-1 Estimated Casualty Production in Buildings for Three Degrees of Structural Damage**

Structural Damage	Percent of Personnel*		
	Killed Outright	Serious Injury (hospitalization)	Light Injury (no hospitalization)
<b>1-2 story brick homes (high-explosive data from England):</b>			
Severe damage	25	20	10
Moderate damage	<5	10	5
Light damage	-	<5	<5
<b>Reinforced-concrete buildings (nuclear data from Japan):</b>			
Severe damage	100	-	-
Moderate damage	10	15	20
Light damage	<5	<5	15

\*These percentages do not include the casualties that may result from fires, asphyxiation, and other causes from failure to extricate trapped personnel. The numbers represent the estimated percentages of casualties expected at the maximum range where a specified structural damage occurs. See Chapter 11 for the distances at which these degrees of damage occur for various yields.

November 1940 design by C. A. Joy, M. Inst. Me. & C. E.,  
Bexley Borough Engineer (UK National Archives: HO 205/257)



BANK OF JAPAN BUILDING AFTER ATTACK ON HIROSHIMA



GEIBI BANK CO. BUILDING AFTER ATTACK ON HIROSHIMA





This blast effects data was however shamefully not used in the U.S. Office of Technology Assessment's 1979 report *The Effects of Nuclear War*, or any of CND's publications attacking civil defence. We then gave the evidence that a bias is the cause. This was nothing new. Herman Kahn



was vilified by James Newman's review of "On Thermonuclear War" in the *Scientific American*, after debunking early fallout radiation "genetic mutation" fears as bunk compared to normal risks in peacetime (see quote from OTW below) and also debunking strontium-90 food contamination doomsday exaggerations. He was also vilified by a Kubrick film called *Dr Strangelove* which parodied Kahn's analysis of the rationale for a nuclear war.

As William A. McWhirter explained in his Herman Kahn article in the 6 December 1968 issue of *Life* magazine (below), Herman Kahn was *not trying to get a first strike or start a nuclear war*:

**"The Left, Kahn argued, by insisting war was unthinkable and impossible, placed the U.S. in a position where it could be blackmailed by an enemy."**



Exuberantly, Herman delights in the size and spaciousness of the Hudson Institute estate, which seems perfectly scaled for a 300-lb, global adviser.

The Left, Kahn argued, by insisting war was unthinkable and impossible, placed the U.S. in a position where it could be blackmailed by an enemy. On the other hand, the Right, according to Kahn, by espousing a U.S. "nuclear umbrella" to cover the entire globe, not only risked wholesale destruction but engendered a good deal of fear and hatred from much of the world.



by **WILLIAM A. McWHIRTER**  
Vol. 65 No. 23 December 6 1968  
**Dr. Strangelove??**

Consider, for example, how Herman Kahn became a national figure in Japan six years ago. "They took to me just like that," he says with a snap of his fingers, "because I told them what they wanted to hear. Which was that they would be the world's third-ranking industrial power by 1970." How did Herman know that? He put a simple ruler on an economic growth chart and drew a line—straight up.



In 1940, as a freshman at U.S.C., Herman showed little of the weight but much of the same self-confidence he exhibits today. In class he either slept or read, then further annoyed his teachers by jumping up to answer a question and going back to his book or to sleep.



At the age of 9, Herman posed with his 12-year-old brother Irving in the Bronx. The years of growing up there and in California were unsettling. Herman's parents, who were Russian immigrants, drifted apart as the family veered shakily from modest wealth to welfare rolls and back again.

At this point in the lecture a lady in the audience got up and said in a very accusing voice, "I don't want to live in your world in which 1 per cent of the children are born defective." My answer was rather brutal, I fear. "It is not *my* world," I observed, and I then pointed out that if she did not want to live in a world in which 1 per cent of the children were born defective she had a real problem, since 4 per cent of the children are born defective *now*. This story illustrates that peace also has its tragedies, and that we tend in our day-to-day life to ignore the existence of this continuing risk. Unless their own family or close friends or relatives have been affected, most people just ignore these kinds of risks in the environment in which we live and raise families.

**Herman Kahn, On Thermonuclear War, 1960: 4% of kids are normally defective, and even a massive survivor dose of 250 R from a severe nuclear war would only cause an increase to 5%. In other words, war and peace differ by only a 1% difference.**

U.S. Army strategic nuclear forces analyst Dr Michael F. Altfeld explained "Why MAD (Mutual Assured Destruction) was Insane" in his article of that title published in the U.S. Army Nuclear and Chemical *Agency NBC Report* (Spring/Summer 2006, pp. 56-61). First, the John Foster Dulles "massive retaliation speech" of 12 January 1954 was, as Dulles later clarified in *Foreign Affairs*, only a policy of



"massive retaliation" as the *most extreme possible option in a strategy of "selective retaliation"*. At that time the actual policy was geared towards tactical nuclear weapons of low yield (hence the Nevada "Desert Rock" tests). In 1962 the 0.02 kiloton Davy Crockett was test fired in Nevada shots Little Feller II and Little Feller I (Little Feller I was fired in front of Robert Kennedy). **The point of nuclear weapons stockpiles, after their strategic use against wooden Japanese cities in August 1945, was to save money by replacing the massive conventional armies which led to WWI and WWII, with relatively cheap and more highly deterring nuclear weapons.**

American was able to demobilize (Russia did not) after WWII due to its possession of nuclear weapons. To make bombs *credible as a deterrent during the Cold War*, accurate delivery systems (computer guided cruise missiles, MIRV warheads, etc.) were developed to hit *military targets* with pin point accuracy, rather than civilian cities:

## HEARING ON CIVIL PREPAREDNESS AND LIMITED NUCLEAR WAR

WEDNESDAY APRIL 28, 1976

U.S. SENATE AND  
U.S. HOUSE OF REPRESENTATIVES,  
JOINT COMMITTEE ON DEFENSE PRODUCTION,  
Washington, D.C.

The committee met at 10:05 a.m. in room 5302, Dirksen Senate Office Building, Hon. William Proxmire, vice chairman of the subcommittee, presiding.

Present: Senators William Proxmire and John Sparkman.

Senator PROXMIRE. The committee will come to order.

Today's hearing inaugurates a review by the Joint Committee on our Nation's civil preparedness. It is the first such congressional review in over two decades.

By civil preparedness, we mean those mainly civilian measures by which we seek to protect the lives and property of our citizens.

This is the first function of any government. A government which cannot meet this fundamental test of defending its people and the national treasure is not likely to survive for very long.

In subsequent hearings, the committee will examine the adequacy of Federal, State, and local preparedness programs, including plans for fallout shelters, strategic evacuation, preparedness exercises and drills, civil defense stockpiles, and continuity of government. Likewise, the Joint Committee will inquire into the organization of the Government for preparedness. It will also review the Nation's industrial and economic preparedness in terms of the defense industrial base.

This is an especially timely undertaking. Over the past 2 years the United States has been moving from a declared nuclear policy of mutual assured destruction to one of flexible response, or limited nuclear war.

In the minds of some eminent strategists, this implies a lowering of the nuclear weapons threshold, a quickening of the trigger finger on the missile launch console, and an increased probability of uncontrolled nuclear conflict.

But to other equally qualified experts, this shift in strategic doctrine, this shift to larger numbers of more flexible, or more versatile and accurate weapons and control systems does not undermine deterrence of nuclear war; instead, it enhances deterrence.

Well, it can't be both ways and whenever you have such a complete divergence in expert opinion, it is time for a careful review of the facts.

These hearings are also timely in that there are increasing rumors of a civil defense gap, with the Soviet Union well in the lead.

In this year's annual report, Defense Secretary Rumsfeld stated that, and I quote:

An asymmetry has developed over the years that bears directly on our strategic relationship with the Soviets and on the credibility of our deterrent posture. For a number of years, the Soviets have devoted considerable resources to their civil defense effort which emphasizes the extensive evacuation of urban populations prior to the outbreak of hostilities, the construction of shelters in outlying areas, and compulsory training in civil defense for well over half the Soviet population. The importance the Soviets attach to this program at present is indicated not only by the resources they have been willing to incur in its support, but also by the appointment of a deputy minister of defense to head this effort.

Now, the term "asymmetry" used by the Secretary sounds to a non-expert like me like a four-bit word for "gap." We have heard a great deal over the years about gaps that never materialized or proved unimportant. Yet we have spent a lot of money to eliminate the non-existent or the insignificant. It is for this reason that the committee last week published the declassified text of the 1957 Gaither Report which invented the first missile gap.

3

### STATEMENT OF HON. PAUL NITZE, FORMER SECRETARY OF THE NAVY, DEPUTY SECRETARY OF DEFENSE, AND MEMBER OF THE SALT DELEGATION

Mr. NITZE. Mr. Chairman, my interest in the questions which this committee is discussing began in 1944 when I was asked to be a director of the U.S. Strategic Bombing Survey. The required qualification of the directors was that they have no prior knowledge of military strategy or of air power, and could thus be presumed to be unbiased in appraising the effects of the immense U.S. strategic air effort in World War II. I spent the next 2 years in Europe and then in the Pacific in intensive work, in association with what I believe to have been the best talent available to this country, to try to understand something about both subjects. In the Pacific portion of the survey, as Vice Chairman, I was in effective command of the operation, including the detailed study of the effects of the weapons used at Hiroshima and Nagasaki.

Since that time much has changed. Weapons have increased in yield and missiles now have an intercontinental range. But these changes are hardly as revolutionary as the changes brought about by the role of effective air power in World War II and of the introduction of nuclear weapons in its closing phase. After all, the largest number of our nuclear reentry vehicles today are Poseidon warheads, each of which has an equivalent megatonnage less than twice that of the weapons used at Hiroshima and Nagasaki.

At Hiroshima and Nagasaki there was no air-raid warning and very few people availed themselves of the crude civil defense facilities which were available. Most of those that did, even at ground zero, in other words, directly under the explosion, which was at the optimum height of burst, survived. The trains were operating through Hiro-

Above: U.S. Congressional Hearings on Civil Preparedness and Limited Nuclear War from 1976: "Over the past two years, the United States has been moving from a declared nuclear policy of mutual assured destruction to one of flexible response, or limited nuclear war." This is validated by declassified documents written by senior nuclear weaponeers. That was at the deepest point of the arms race during the Cold War, when the USSR was both achieving nuclear parity with the West at an escalating economic cost, and this led to civil defence in both the USA and UK (e.g. Cresson Kennedy's 1979 official *Nuclear War Survival Skills*, based on proof-tested American versions of



Russian civil defence shelters, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA328301>, and British civil defence, which included some of Kearny's designs but also incorporated improved versions of WWII shelters as proof tested during British nuclear tests; these countermeasures were similar to army field defenses, so their nuclear test validation evidence remained a military secret).



There are currently over 100 U.S. Bases along with 7000 nuclear warheads sited in the United Kingdom, more than in any other country of similar size and population. The stockpile of nuclear weapons in this country has a combined explosive power equal to 200 million tons of TNT. It is estimated that 600 nuclear weapons would wipe out the 200 Soviet cities which house the majority of the population. In 1979, the U.S.A. had approximately 13,000 nuclear weapons. The British taxpayer has to pay an annual arms bill of £10,500 million, equivalent to £197 for every man, woman and child in the country. The world as a whole spends £600 million a day on weapons.

**Moscow World Peace Council / CND propaganda from 1980 omits USSR arms!**

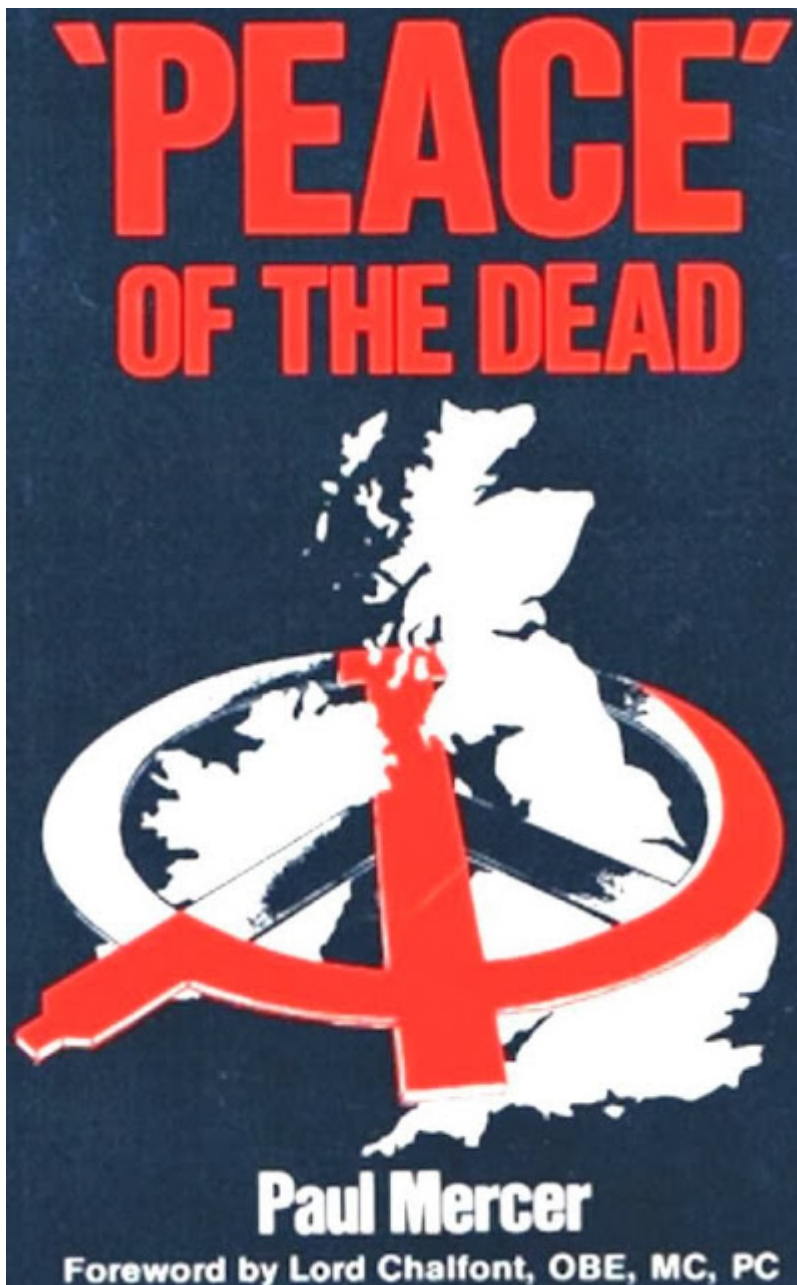
**Above:** CND/Moscow "World Peace Council" produced propaganda supporting the enemy, which first falsely correlated the energy release with the TNT equivalent, ignoring

**(1) THE CUBE-ROOT DISTANCE SCALING WHICH MEANS THAT BLAST CASUALTY AREAS ONLY SCALE AS THE TWO-THIRDS POWER OF YIELD (I.E. THE CASUALTIES PER TON OF TNT EQUIVALENT AREN'T PROPORTIONAL TO TOTAL YIELD OF AN EXPLOSION, TO THE TWO THIRDS POWER OF YIELD PER UNIT YIELD, WHICH USING THE LAW OF INDICES RESULTS IN THE CASUALTIES PER TON BEING PROPORTIONAL TO  $1 / [\text{CUBE ROOT OF YIELD}]$ ), AND**

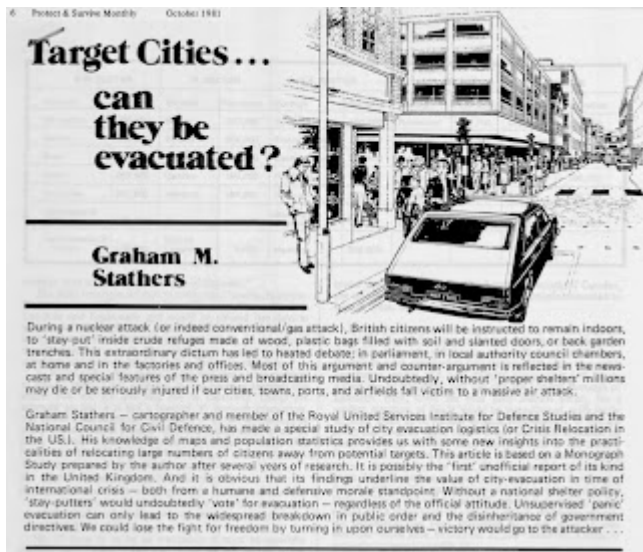
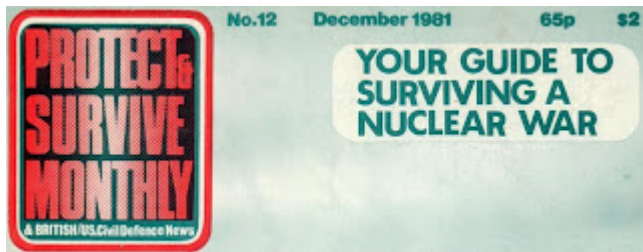
**(2) BIGGER YIELDS WHICH PRODUCE LARGER AREAS OF DESTRUCTION INCREASE THE MEAN TIME BETWEEN THE FLASH AND THE BLAST ARRIVAL OVER THE SERIOUS BLAST AREA, ALLOWING MORE TIME FOR DUCK AND COVER AGAINST BLAST WIND DISPLACEMENT AND FLYING DEBRIS. THE "OVERKILL" CONCEPT IS ALSO BOGUS FOR THE STRATEGIC AND TACTICAL REASONS LINKED HERE (THERE IS NO "THEORETICAL**

**LIMIT" TO HOW MANY PEOPLE A SINGLE STICK OR STONE COULD KILL, SO YOU COULD SAY THAT ANY ROCK COULD IN THEORY KILL EVERYONE IN THE UNIVERSE; THE PRACTICAL LIMITATIONS ARE SIMPLY MORE OBVIOUS WITH A ROCK THAN A NUCLEAR WEAPON DUE TO WIDESPREAD IGNORANCE OF THE TRUE LIMITATIONS AND PHYSICS OF THE LATTER).**

The propaganda also ignored the military threat from the USSR's massive arms spending, presenting the nuclear threat as being our own deterrent, not the enemy. (As if we are at risk of bombing our own country.) Paul Mercer worked for CND's head office as a "spy for peace" but after discovering – in CND's confidential files – the evidence that the leaders of CND were communists who were being aided by the USSR "Moscow World Peace Council" (a Kremlin KGB-front) – he exposed the shocking truth in his 1986 book *Peace of the Dead: The Truth Behind the Nuclear Disarmers* (which we reviewed here), with a foreword written by Lord Chalfont:







**Media enemy-supporting propaganda within democracies: simple lies win out over complex truths**

*"... fashionable trends of thought and ideas are carefully separated from those which are not fashionable ... what is not fashionable will hardly ever find its way into periodicals or books or be heard in colleges. Legally your researchers are free, but they are conditioned by the fashion of the day. There is no open violence such as in the East; however, a selection dictated by fashion and the need to match mass standards frequently prevent independent-minded people from giving their contribution to public life. There is a dangerous tendency to form a herd, shutting off successful development. I have received letters in America from highly intelligent persons, maybe a teacher in a faraway small college who could do much for the renewal and salvation of his country, but his country cannot hear him because the media are not interested in him. This gives birth to strong mass prejudices, blindness, which is most dangerous in our dynamic era."*

**- Aleksandr Solzhenitsyn's 1978 Harvard address (section discussing the dictatorship by fashion).**

USSR dissident Solzhenitsyn, a maths and physics graduate, served as an artillery officer in the Red Army from 1941-5, and was decorated for gallantry, but in February 1945 he was arrested for making a critical reference to Stalin in a letter, receiving as punishment 8 years hard labor, before being exiled in 1953. He was refused permission to collect his Nobel Prize for literature in 1970, and then was arrested for treason in 1974. He moved to Vermont, USA, in 1975. USSR dissidents were the main problem for the USSR "appeasers" in the Western media, scientific, and political unions during

the Cold War, so the British Prime Minister met him on 11 May 1983 (UK National Archives document PREM 19/1103), expressing interest in his statement that “the West believed it had a free press but that in fact it had a censorship of fashion.”

Solzhenitsyn explained that Lenin in 1919 created Comintern to destroy Western capitalism: “The worst thing about the Politburo was [that] ... Marxism ... obliged them to act in certain ways. ... He did not believe that there would be a nuclear war. For a **nuclear threat was sufficient to paralyse an adversary.**”

**“Collective fear stimulates herd instinct, and tends to produce ferocity toward those who are not regarded as members of the herd.” — Bertrand Russell, *Unpopular Essays***

“Neither a man nor a crowd nor a nation can be trusted to act humanely or to think sanely under the influence of a great fear.” — Bertrand Russell, *Unpopular Essays*



Mr Churchill, continuing, said that the War Cabinet must face the fact that the North of Russia would be over-run by Bolsheviki, and many people would be murdered. He was increasingly distressed with the way the situation had developed since the Armistice. Everything was going wrong. The continued disheartening of the Russian forces friendly to us had led to a great falling off in their moral. When firing stopped, the Ukraine was occupied by the Germans. We requested them to withdraw, but we put in no Allied force there, and now that area, rich in food, was in the hands of the Bolsheviki. The Bolsheviki were taking Nicholiev and Kherson, and were advancing on the Black Sea. Odessa might soon be invested. Four months had passed in a policy of drift, and great potential resources which might have helped us were being dissipated. It was idle to think we should escape by sitting still and doing nothing. Bolshevism was not sitting still. It was advancing, and unless the tide were resisted it would roll over Siberia until it reached the Japanese, and perhaps drive Denekin into the mountains, while the border Baltic States would be attacked and submerged. No doubt when all the resources friendly to us had been scattered, and when India was threatened, the Western Powers would bestir themselves

Mr Bonar Law said that an effort must be made to distinguish our activities in the Baltic States from the larger Russian policy. We had undertaken to support the Baltic States against the menace of Bolshevism.

Mr Chamberlain said we had decided that we were not going to fight the Bolsheviki all along the line. It was beyond the capacity of France and Britain to do so, and the United States would not co-operate. That could be made plain to the General Staff. They should address themselves to the question of what was necessary to prevent the Baltic States from being submerged. -7-

**Austen Chamberlain  
(Chancellor of the Exchequer in  
1919 and brother of Nazi  
appeaser Neville Chamberlain)  
refused to fight the Russians.**



**28 February 1961 Daily Mail  
shows treatment for USSR protestors  
(Bertrand Russell of the CND  
"Committee of 100" being carried off)**

**British War Cabinet minutes, March  
1919: Winston Churchill on commies.**



**1919 Bolshevik commie propaganda poster shows anti-commie Russian  
commanders Yudenich, Kolchak, Denikin as dogs controlled by Uncle Sam.**

Solzhenitsyn was not the only man of peace to defect from the USSR. Colonel Oleg Penkovsky was executed by Khrushchev's thugs by firing squad on 16 May 1963 (photo below from *Sbornik*, the KGB magazine) after he leaked photographs of top secret classified nuclear war planning employment documents from the USSR "Military Thought" journal to the West (example linked here):





Always look for people's reactions to alternative solutions to problems. If they dismiss alternative ideas *without objectively evaluating them*, their own "argument" is likely based on the threatening and false dictatorship premise: "you must do as I say, because there are *no alternatives* to doing so!" This dictatorial out of hand *dismissal of alternative ideas*, combined with fear-mongering terrorism designed to "close down arguments" before they have occurred, is designed to *prevent and deter* effective, *objective thinking*. The "pacifists" who use lying exaggerations and claims that "there are no alternatives to disarmament/surrender" (dismissing civil defense countermeasures, deterrence, and all out possible solutions) are using unjustified and unjustifiable deceptions. This occurred with poison gas back in the 20s and 30s (illustrations below are adapted from "Debunking Poison Gas War Scares" in the July 1935 issue of *Modern Mechanics* and "Gas Masks for All" in the *Modern Mechanics*, March 1937 issue):



# DEBUNKING *Poison* *Gas* WAR SCARES

by CAPTAIN GEORGE J. B. FISHER,  
*Chemical Warfare Service, U. S. Army*

**E**NORMOUS cities blanketed with death-dealing gas fumes. Citizens rushing about in panic as enemy planes roar overhead. Thousands of lives snuffed out in a few minutes. Countless humans coughing and screaming with fear, fighting among themselves to reach subterranean gas-proof cellars.

This is the terrifying picture so frequently painted by fiction writers, the movies, and the sensational press about the horrors of poison gas in the next war.

But is the picture a true one? Is there any basis in fact for it? No, says the Chemical Warfare Service of the United States Army. After more than twenty years experimentation with every kind of poison gas known to science, the nation's acknowledged authority on the subject has come to the conclusion that gas is the "bogey man" of war.

20 milligrams of mustard gas absorbed into the lungs will cause death. At first glance it would seem, therefore, that 12,000 tons of this chemical could wipe out a third of the population of the United States.

There is a very simple reason why most poison gases are not more destructive and that is because weather conditions tend to reduce the harmful chemical effects to a minimum. A wind blowing at the rate of only four miles per hour, for instance, can move a huge cloud of deadly gas from a given region at the rate of 352 feet per minute. Result? Much of the chemical will be carried away over the heads of the people intended to be destroyed.



Smoke screens laid over a city by planes will make it difficult for enemy air raiders to launch bomb and gas attack. To drop gas raiding planes must fly low, making them vulnerable to





Above—Japan, too, is preparing her people against possible gas and bombing raids. Cameramen at left is taking pictures of a mock gas raid staged at Tokyo. Priests, soldiers, and civilians are supplied with masks. Left—Squads of volunteer workers are equipped with portable sirens for warning towns of gas attacks.



# GAS MASKS FOR ALL

by Robert Gordon

ducts gas as well as fire drills in schools. Germany and every other European country have provided masks and fume-proof shelters for civilians operating electric power plants and other vital services. A Czech manufacturer is marketing a mask with a telephone and microphone attachment for the conduct of business as usual in spite of gas.

This all goes to show that Europeans, unprotected as America by wide oceans, from hostile nations, have a genuine personal fear of death from the clouds in a general conflict. Just how real the danger is a matter of argument. Gas figured little, if any, in the first six months of the Spanish struggle and it is obvious that the element of surprise, which made the first World War attacks so terrible, is no longer present.

Chemists agree that the most deadly gases are also the most volatile—the most easily blown away. No less an authority than Colonel Adelno Gibson, chemical officer of the Second Corps Area, says that the reports of "super" gases developed since the World War are myths.

*Modern Mechanic*

Below — English mothers participate in gas drills, donning masks, and conducting their children to gas-proof shelters.



The possibility of civilians losing morale and being thrown into a panic by gas, however, is everywhere recognized. It is to guard against this that the British have set up an Air Raid Precautions Department as part of the Home Office. In Germany, the National Air Safety League with the slogan "Save Yourself" has distributed 7,500,000 masks to its members. Its most popular model is one selling for \$6. The British civilian mask costs the government but two shillings.

What all military men know, but what many civilians do not understand, is that the object of an air raid over a large city is to create panic, to cause enough cessation of industry and commerce that armies cannot be supplied, and to so weaken the will of the populace that they will demand peace on any terms without waiting for a decision to be won by their army on the field of battle. Death and property damage are not the end in itself.

The possibilities of destruction by aerial bombing have been greatly exaggerated. During the last nine months of the World War, for instance, according to official figures published in the *Coast Artillery*

March, 1937

Right—In England, gas masks are sold for civilian use at a cost of about 50c each. The respirators are reliable and provide protection for periods up to 12 hours at a time.

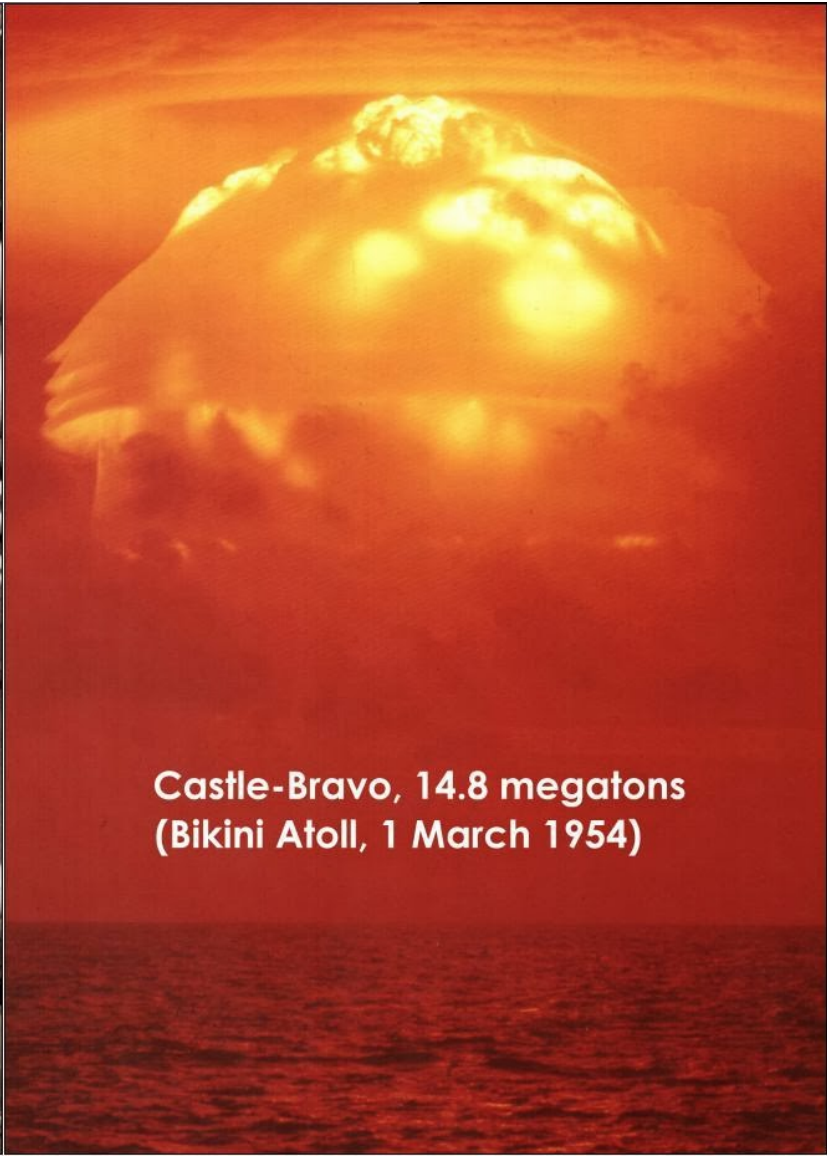
Below — Proposed gas shelter designed for construction in suburban communities and gardens.



Popular media deceptions about gas annihilation and the "impossibility" of any simple deterrent like a gas mask or a room with windows closed (despite evidence to the contrary, as illustrated above) during the 1920s and 1930s fostered the appeasement culture which actually encouraged thugs and dictators to abuse Western disarmament and pacifist "no first strike" propaganda. Timidity merely encourages thugs to succeed by the use of fear-based coercion or violence.



10 Mt Mike,  
1952



Castle-Bravo, 14.8 megatons  
(Bikini Atoll, 1 March 1954)

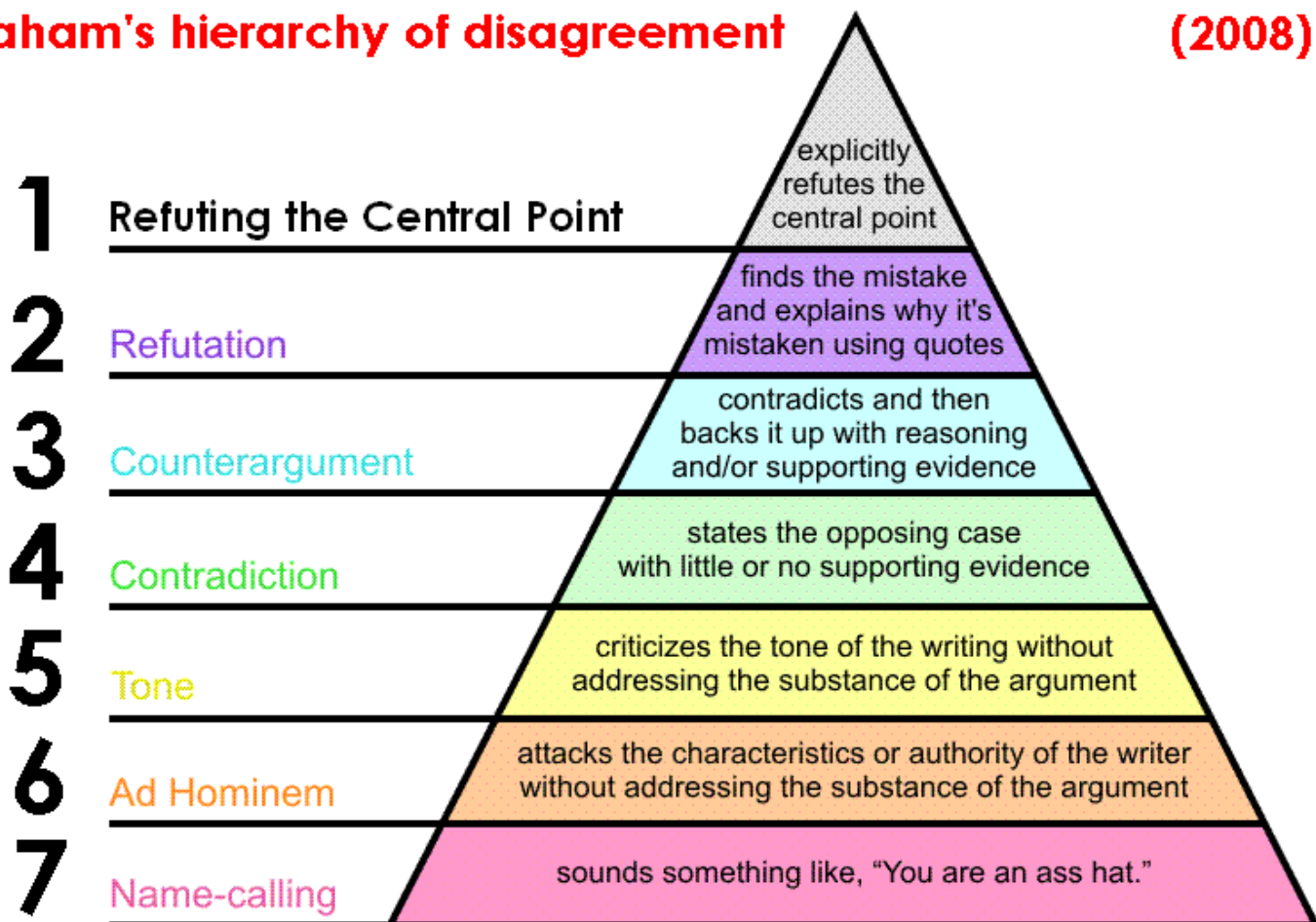
**Above:** 10 Megaton Mike (1952) and 15 megaton Bravo (1954) recur in CND-type propaganda, yet were dismissed by Professor Freeman Dyson in his 1984 book *Weapons and Hope*, where he points out that the 10-15 megaton bombs were absurdly large and obsolete by the time of his visit to Los Alamos in 1956, where people were working on much smaller, lighter devices to fit into the cramped warheads of missiles with precision, computer guided delivery. The shot below is 11 megaton Romeo:





It's not easy to dig up the truth. It is easy to believe in plausible lies and brush off "alternatives" to those lies. Furthermore, as Janis explains in *Victims of Groupthink*, anyone can easily and cheaply earn kudos by dismissing the truth as false, using *ad hominem* attacks on people while ignoring the substance of their factual argument (or picking out "strawman" trivia from the edges of an argument, and making a show out of charging it).





**Above:** this kind of simplistic "hierarchy of disagreement" rhetorical tool fails to address religious-like belief systems which are deliberately constructed with a network of multiple hubs, thus lacking any "central point" of specific foundation. You can't destroy the heart of a dispersed network that lacks a heart. Is the "central point" or heart of exaggerations like gross nuclear weapons effects lies the strontium-90 radiation, the blast, heat, firestorms, ozone layer damage, EMP, the fireball, or nuclear winter? If you painstakingly debunk all the exaggerations, the audience is too bored to listen, or forgets the earlier arguments that have been debunked and repeats the debunked arguments. This difficulty is like the debunking of communism by American counter-propaganda in the Vietnam war (or the debunking of Al Queda beliefs):

*"THE AMERICANS CAME TO OUR COUNTRY AND BROUGHT DEATH AND DESTRUCTION TO OUR PEOPLE. THEY ARE AGGRESSORS AND WE VIETNAMESE ARE FIGHTING THE AGGRESSORS. WE SHALL FIGHT TILL FINAL VICTORY. ... VIETNAM IS A PEACE-LOVING COUNTRY. WE DID NOT INVADE OR BOMB ANY COUNTRY. IT IS THE AMERICAN PRESENCE IN VIETNAM THAT STARTED THE WAR AND MADE THE WAR CONTINUE SO LONG. ... NORTH VIETNAM AND SOUTH VIETNAM ARE BUT ONE COUNTRY. NORTH VIETNAM CERTAINLY HAS THE RIGHT TO HELP HIS BROTHERS IN THE SOUTH AND FIGHT THE AGGRESSORS. ... VIETNAM BELONGS TO THE*



## **VIETNAMESE. THE UNITED STATES HAS NOTHING TO DO WITH OUR COUNTRY.”**

– Vietcong cadre quoted by Konrad Kellen, *Conversations with Enemy Soldiers in Late 1968/Early 1969: A Study of Motivation and Morale*, RAND Corporation, RM-6131-1-ISA/ ARPA (AD0714834), September 1970, page 92 (originally secret).

This Vietcong attitude was shared with many communist and Marxist socialist fellow-travellers, communist party members, politicians, and media personalities, and similar arguments today appear in the Western media with regards to Afghanistan. Kellen’s Vietnam RAND Corporation report (DTIC document AD0714834) summarizes this situation on page x:

**“ONLY BY IMMERSING HIMSELF IN THESE RESPONSES CAN THE READER OBTAIN A GENUINE FEELING OF HOW HIGH MORALE OR HOW STRONG MOTIVATION IS ON THE OTHER SIDE. ... THE ENEMY’S PICTURE OF THE WORLD, HIS COUNTRY, HIS MISSION, AND OUR ROLE IN HIS COUNTRY IS REMARKABLE BY ITS SIMPLICITY, CLARITY, AND INTERNAL CONSISTENCY. ... FINALLY, THE RESPONSES ARE IMPRESSIVE BY THEIR STRAIGHTFORWARDNESS. UNLIKE INTERVIEWS WITH PRISONERS OR DEFECTORS OF WORLD WAR II, THE KOREAN WAR, OR REFUGEES FROM BEHIND THE IRON CURTAIN, THESE INTERVIEWS REVEAL FEW ATTEMPTS OF THE VIETNAMESE PRISONERS TO INGRATIATE THEMSELVES WITH THE INTERVIEWER, NOR DO THESE PRISONERS APPEAR SULLEN. PRISONERS REPORT AND EXPLAIN, ONE IS TEMPTED TO SAY, PATIENTLY, TO THE INTERVIEWER WHAT THEY HAVE EXPERIENCED AND WHAT THEY BELIEVE AND THINK. ANALYSIS OF THE PRESENT MATERIAL INDICATES THAT NEITHER OUR MILITARY ACTIONS NOR OUR POLITICAL OR PSYWAR EFFORTS SEEM TO HAVE MADE AN APPRECIABLE DENT ON THE ENEMY’S OVERALL MOTIVATION AND MORALE STRUCTURE. THE FINDINGS ALSO DISCLOSE, AS IN THE AFOREMENTIONED 1967 STUDY OF THE ENEMY, THAT BOTH MORALE AND MOTIVATION IN FIGHTER AND CADRE RANKS ARE UNLIKELY TO COLLAPSE UNDER SIMILAR CIRCUMSTANCES IN THE NEAR FUTURE.”**

This high-enemy-morale problem was not new to America, of course, and in August 1945 the Japanese kamakaze mentality was dealt with by the Democrat, President Harry S. Truman, using two nuclear weapons. The simplistic attitude of the Vietcong and Afghan insurgent is very similar to the hardened mindset of many people in the West today with regard to the supposed immorality or immense risks of low level radiation, civil defence against disasters, and nuclear weapons for cost

effective and militarily effective counterforce deterrence (deterrence against military targets, not cities). Always, plausible-sounding authoritative-appearing consensus lies triumph in politics, the media and science, over scientific objectivity based on hard facts because it tells people what they want to hear, which is not the truth! The truth always takes too long to explain, fails to provide funding eternal funding to researchers, or sounds "boring" or "old fashioned."

"Mundus vult decipi, ergo decipiatur." ("The people wish to be deceived, so let them be deceived.")

Most prefer utopian hopeful fantasies to tough reality. They are ideologues who want to believe in contrived propaganda that reinforces their ideals:

***"I USE THE TERM "GROUPTHINK" ... WHEN THE MEMBERS' STRIVINGS FOR UNANIMITY OVERRIDE THEIR MOTIVATION TO REALISTICALLY APPRAISE ALTERNATIVE COURSES OF ACTION. ... THE GROUP'S DISCUSSIONS ARE LIMITED ... WITHOUT A SURVEY OF THE FULL RANGE OF ALTERNATIVES."***

– Irving L. Janis, *Victims of Groupthink*, Houghton Mifflin, Boston, 1972, pp. 9-10

***"THE PATH OF TRUTH IS PAVED WITH CRITICAL DOUBT, AND LIGHTED BY THE SPIRIT OF OBJECTIVE ENQUIRY... ALWAYS THE TENDENCY CONTINUES TO BE SHOCKED BY NATURAL COMMENT, AND TO HOLD CERTAIN THINGS TOO 'SACRED' TO THINK ABOUT. I CAN CONCEIVE NO FINER IDEAL OF A MAN'S LIFE THAN TO FACE LIFE WITH CLEAR EYES INSTEAD OF STUMBLING THROUGH IT LIKE A BLIND MAN, AN IMBECILE, OR A DRUNKARD – WHICH, IN A THINKING SENSE, IS THE COMMON PREFERENCE. HOW RARELY DOES ONE MEET ANYONE WHOSE FIRST REACTION TO ANYTHING IS TO ASK: 'IS IT TRUE?' YET, UNLESS THAT IS A MAN'S NATURAL REACTION, IT SHOWS THAT TRUTH IS NOT UPPERMOST IN HIS MIND, AND UNLESS IT IS, TRUE PROGRESS IS UNLIKELY."***

– Sir Basil Henry Liddell Hart, "Why Don't We Learn from History?", PEN Books, 1944; revised edition, Allen and Unwin, 1972.

Irving L. Janis, *Victims of Groupthink*, Houghton Mifflin, Boston, 1972, pp. 61, 197-8, and 206:

***"THE OBJECTIVE ASSESSMENT OF RELEVANT INFORMATION AND THE RETHINKING NECESSARY FOR DEVELOPING MORE DIFFERENTIATED CONCEPTS CAN EMERGE ONLY OUT OF THE CRUCIBLE OF HEATED DEBATE, WHICH IS ANATHEMA TO THE MEMBERS OF A CONCURRENCE-SEEKING GROUP. [FACTUAL ARGUMENTS ARE BEING SIMPLY CENSORED OUT AS BEING SHOCKING, DISTASTEFUL, RUDE, AGGRESSIVE, OR***

PROVOCATIVE; SEE FOR INSTANCE JAMES NEWMAN'S SCIENTIFIC AMERICAN "REVIEW" OF HERMAN KAHN'S BOOK ON THERMONUCLEAR WAR IN 1961!] ... SYMPTOMS RUN THROUGH THE CASE STUDIES OF HISTORIC FIASCOES ... AN UNQUESTIONED BELIEF IN THE GROUP'S INHERENT MORALITY ... DISSENT IS CONTRARY TO WHAT IS EXPECTED OF ALL LOYAL MEMBERS ... SELF-CENSORSHIP OF ... DOUBTS AND COUNTERARGUMENTS ... A SHARED ILLUSION OF UNANIMITY ... (PARTLY RESULTING FROM SELF-CENSORSHIP OF DEVIATIONS, AUGMENTED BY THE FALSE ASSUMPTION THAT SILENCE MEANS CONSENT)... THE EMERGENCE OF ... MEMBERS WHO PROTECT THE GROUP FROM ADVERSE INFORMATION THAT MIGHT SHATTER THEIR SHARED COMPLACENCY ABOUT THE EFFECTIVENESS AND MORALITY OF THEIR DECISIONS. [THIS IS CRUCIALLY IMPORTANT; IN ALL CULTS THERE ARE KUDOS TO BE "EARNED" BY LOWER-RANK MEMBERS WHO LAUNCH KAMAKAZE-TYPE EMOTIONAL, SUBJECTIVE, SCREAMING ABUSE ON OBJECTIVE CRITICS, OR WHO REPEATEDLY CHANT MESSAGES IN THE MANNER OF GEORGE ORWELL'S SHEEP IN ANIMAL FARM. THESE PEOPLE ACT AS OFFICIAL OR UNOFFICIAL GATE-KEEPERS OF THE CULT, ALLOWING THE "LEADERSHIP" TO APPEAR CLEAN AND QUIET, IF NEED BE, NOT ENGAGING WITH PEOPLE SMEARED FALSELY AS "WARMONGERS" OR "QUACKS" BY THE SELF-APPOINTED GATE-KEEPERS FORMED OF THE LOWER RANKS. BY ANALOGY, HITLER'S SS AND KHRUSHCHEV'S KGB QUIETLY DEALT WITH CRITICS USING GAS OR THE GULAG, LEAVING THE LEADERSHIP LOOKING PRISTINE AND PURE, TO SHAKE HANDS WITH MEN LIKE PRIME MINISTER CHAMBERLAIN.]

"... OTHER MEMBERS ARE NOT EXPOSED TO INFORMATION THAT MIGHT CHALLENGE THEIR SELF-CONFIDENCE. [CENSORSHIP OF TRUTH IS THE FOUNDATION OF DOGMATIC LYING CULTS; ANY DISCLOSURE OF THE FACTS IS A KICK IN THE HEAD FOR THE LIARS, SO THEY ARE PROTECTED LEGALLY IN DICTATORSHIPS WHERE PSEUDO-LAWS ARE PASSED TO SEND CRITICS TO SIBERIAN SALT MINES, OR TO CONCENTRATION CAMPS. THESE "LAWS" AND PSEUDO-LAWYERS CAN THEN SCREAM THAT THE CRITICS ARE ACTING "ILLEGALLY" AND MUST BE PUNISHED, THE WAY THAT "PACIFISTS" SCREAMED "THOU SHALT NOW KILL" WHENEVER



***ANYONE SUGGESTED SAVING MANY LIVES BY EFFECTIVELY DEALING WITH HITLER, OR BIN LADEN.]”***

There is also the problem of attrition through survival, where self-righteous enemy morale ensures that even when they are “clearly defeated” as in the case of Japan by August 1945, they adopt a “survivalist” strategy, waiting for the enemy to bankrupt itself, to become weary of the human costs of war, or to doubt victory:

***“MOST [VIETCONG] INTERVIEWEES BELIEVED THE WAR WOULD LAST A LONG TIME AND WOULD END NOT IN A VC [VIETCONG] MILITARY VICTORY, BUT IN A GRADUAL EXHAUSTION OF THE ENEMY [AMERICA].”***

– John C. Donnell, Guy J. Pauker and Joseph J. Zasloff, *Viet Cong Motivation and Morale in 1964: A Preliminary Report*, RAND Corp RM-4507/3-ISA (DTIC document AD0738742), March 1965, page xiii. (Originally secret.)

What’s important here is that the hard pacifist left frequently put out propaganda claiming that in August 1945, America had won against Japan without needing to drop nuclear weapons; yet it takes the opposite attitude to the situation in Vietnam twenty years later where it stresses that despite terrific bombing (730 pounds of TNT per person in Vietnam, and 3,000 pounds per person in prime target areas), America was not “winning”. The reason is psychological:

***“THE INTERVIEWS INDICATED THAT U.S. EFFORTS TO EXPLAIN THE AIR RAIDS ON NORTH VIETNAM HAD FAILED TO ERADICATE THE IMPRESSION AMONG THE PEOPLE OF THE NORTH THAT THE RAIDS WERE UNPROVOKED ACTS OF U.S. AGGRESSION.”***

– L. Goure, A. J. Russo, and D. Scott, *Some Findings of the Viet Cong Motivation and Morale Study: June-December 1965*, RAND Corp RM-4911-2-ISA/ARPA (ADA032192), February 1966, page ix (originally secret).





FIGURE 7-24 OPERATION REDWING CHEROKEE SHOT

testing in the Pacific from 1946 (Baker Able/Baker) through 1962 (Operation ZUNI).



FIGURE 7-25 GAALEN FELT

About two weeks before the readiness date for ZUNI, we toured the shot island (Tare) and the shot cab with Walter Gibbins, UCRL Director and Task Group 7.1 (Appendix B, 7.1 organization). The ZUNI ground zero was near the old KOON crater produced by a UCRL event on Operation CASTLE (Figure 7-26, ZUNI cab.)

Reviewing the fallout documentation plans for ZUNI shot, I spent some time on one of the five fallout collection ships that had been modified by the U.S. Naval Radiological Defense Laboratory (NRDL) at Hunters Point in the San Francisco Bay area. With Commander Don Campbell, Program 2 Director, we visited the YAG-39 (USS George Eastman) which had been modified to permit operations in the fallout area from its heavily

shielded control room and was to be positioned in the fallout zone during arrival of fallout. It was the USS Curtiss (YAG-40) and USS YAG-39. I reviewed the potential contributions of the ships to our all-out effort to collect fallout from large yield thermonuclear weapons. Paul Tompkins and Gail Tompkins, NRDL, and I reviewed their collection needs of NRDL. I was more concerned with the AFSWP costs and long lead times for the fallout collection. The ships were modified in the naval ship yards in the Pacific, the modified ships were truly state-of-the-art.

As the day for ZUNI event approached, everyone was evacuated from Bikini Atoll, including those who had occupied the Control Room on Nan Island during the CHEROKEE shot. The Task Group 7.1 Command staff and key personnel were aboard the USS Curtiss when ZUNI was detonated by a radio signal at 8:56 a.m. on 29 May 1956. Ground zero was near the KOON crater that was made on Operation CASTLE. The yield of the University of California Radiation Laboratory (UCRL) ZUNI shot was 3.5 MT. ZUNI, with its high yield and surface placement, formed a large crater that extended out the western end of Tare island, and debris material was pulled up into the radioactive cloud. As soon as we were able to make an aerial survey of the ZUNI crater, it was flooded by the lagoon waters. Crater dimensions were: radius = 1165 feet, depth = 93 feet (Figure 7-27, ZUNI shot).

The ZUNI radioactive cloud topped at 85,000 feet, with a diameter at that time of 75,000 feet. General cloud movement was to the north at 15 knots, but the lower portion of the stem moved to the west, under the prevailing easterlies, at about the same speed. The 30,000-foot winds turned to the southeast sometime late on shot day, causing light fallout on atolls southeast of Bikini. Heavy fallout was measured throughout most of the radioactivity was measured throughout most of the Bikini Atoll, with readings of 75 R/hr at 4 hours (H+4) along the northern rim of islands).

Fortunately, the same area on Nan was only lightly touched by fallout. An H+4 value of 0.555 R/hr was measured. Fallout contours for the ZUNI event are given in Figure 7-28, with all readings being extrapolated back to H+1 hour. Some hot spots of 150 R/hr were noted at about 50 miles north of the shot point (Figure 7-28, fallout contours, and Figure 7-29, ZUNI chart.)

## TEWA Event

(See Figure 7-30 and 7-31, Eniwetok and Bikini Atoll maps for shot locations.)

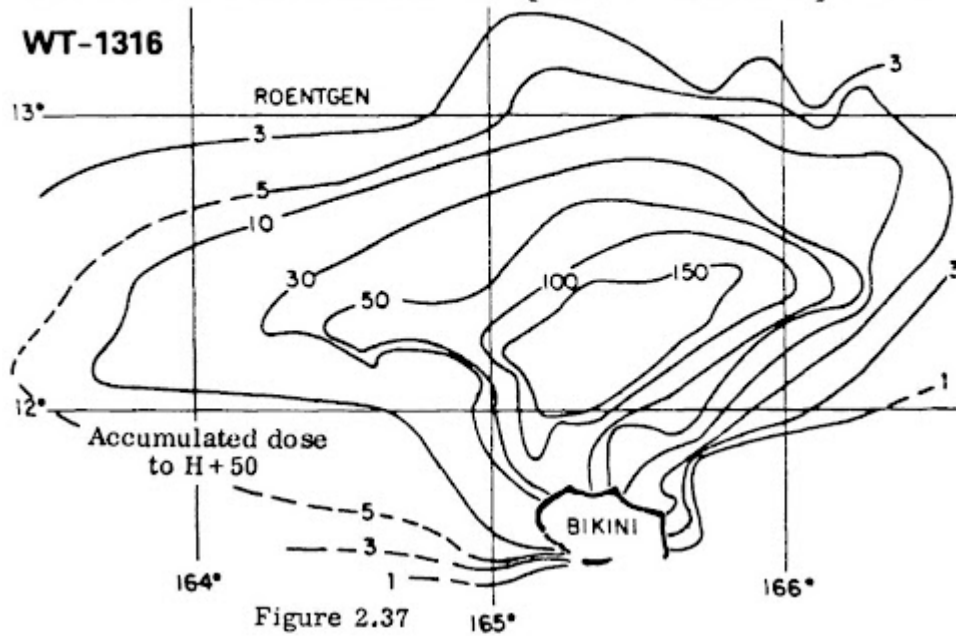
The UCRL 5 MT TEWA device was fired 21 July 1956 on a barge anchored on the reef between Chaita and Dog islands on the north rim of Bikini Atoll (Figure 7-32, TEWA barge). TEWA was a companion event to ZUNI for documentation of fallout from large yield thermonuclear weapons (Figures 7-33 and 7-34, TEWA device and shot cloud). In early Operation REDWING plans, the location of the TEWA device had been moved from deep lagoon waters to as near the coral reef as possible. I had always hoped that it could be anchored in water that was less than the 24.7 feet which occurred on the final placement. Total weight of the barge was 440,000 pounds, including 410,000 pounds of steel, all of which contributed to the fallout by the explosion. Crater measurements were: radius = 1915 feet, depth = 153 feet, with a total of 740 million cubic feet of material being ejected in the formation of the crater. The fallout pattern documented for TEWA (5 MT) was larger than ZUNI (3.5 MT), it was observed that the down wind "hot spot" for TEWA (1000 R/hr) was much higher than on ZUNI (150 R/hr). The difference in fission yield for TEWA as compared to ZUNI (Figure 7-35, TEWA fallout contours, and Figure 7-36, TEWA crater.)

## SEMINOLE Event

The SEMINOLE device was detonated on the western end of Isema island (Eniwetok Atoll) at 12:55 p.m. on 6 June 1956 during Operation REDWING. SEMINOLE was a LASL sponsored event with a low yield of 13.7 KT. However, because the device was detonated within a large water filled tank, it probably had an increased

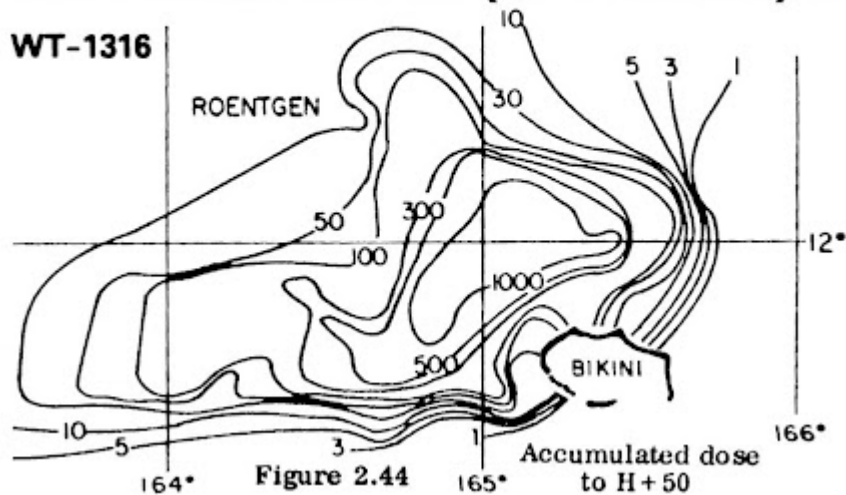
## CLEAN BOMB: 3.53 MT (15% FISSION) ZUNI

WT-1316



## DIRTY BOMB: 5.01 MT (87% FISSION) TEWA

WT-1316



ABOVE: Dr Frank H. Shelton, author of *Reflections of a Nuclear Weaponeer* (1989, illustrated above), was the 1950s Technical Director of the AFSWP (Armed Forces Special Weapons Project) and organized the fallout research project at Operation Redwing which compared directly the fallout from clean and dirty nuclear weapons (see illustration above, taken from US nuclear test report WT-1316, of the ship measured land-equivalent 48 hour fallout doses from the 15% fission "clean" Zuni test compared to the 87% fission "dirty" Tewa test at Bikini Atoll). Shelton states on page 7-41 of *Reflections of a Nuclear Weaponeer*: "TEWA was a companion event to ZUNI for documentation of fallout from large yield thermonuclear weapons. In early Operation REDWING planning, the location of the TEWA event had been moved from deep lagoon waters to as near the coral reef as possible. ... Total weight of the barge was 440,000 pounds, including 410,000 pounds of steel, all of which contributed to the fallout ... it was observed that the downwind 'hot spot' for TEWA (1000 R/hr) was much higher than on ZUNI (150 R/hr). The difference was primarily due to the higher percentage of fission yield for TEWA compared to ZUNI."

In other words, with a 15% fission nuclear weapon, fallout from 3.5 megatons was survivable even outdoors without any protection from buildings whatsoever (for 3.5 megatons, the areas covered by



imaginary "1 hour reference time" dose rates in R/hr are similar to the actual outdoor accumulated dose for the first 48 hours, at which time the dose rate is only 1% of the 1 hour level). So much for the unsurvivable clean bomb fallout myth.



**Buffalo-1 (12.9 kt), 600 yards**

**Land Rover 43BR33 BEFORE BLAST:**

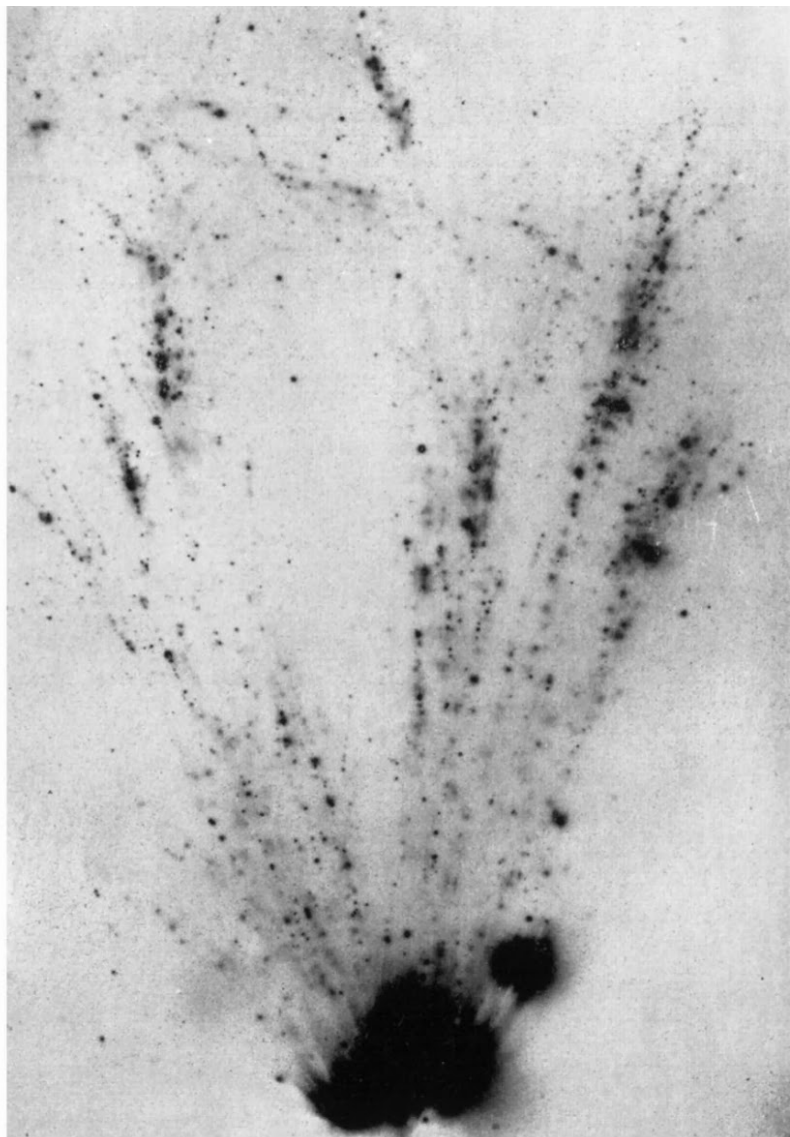


**Land Rover 43BR33 AFTER BLAST:**





ABOVE: the precursor (due to thermal-flash "popcorned" desert sand grains which loaded hot, dense dust into the blast wave near the ground) produced spectacular blast effects on Land Rover cars (British jeeps) at 600 yards from ground zero in the 12.9 kt Buffalo-1 nuclear test at Maralinga in 1956. But, fortunately for civil defense, and unfortunately for the nuclear exaggerations propaganda that tries to compare unobstructed desert blast effects with actual nuclear attack blast effects in cities, *a precursor doesn't form over concrete*. Thermal shadowing by buildings is accompanied by radiation and blast energy absorption by buildings, reducing the range of effects dramatically. Desert nuclear tests were unobstructed and exaggerated the effects of nuclear weapons from the perspective of modern concrete based cities. (Image source: UK National Archives document reference WO 320/2: *Operation Buffalo, effects of blast on Land Rover test vehicle, 1956*. "Copyright clearance for publication is not required," *because taxpayers paid for nuclear research*. See also images [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), and [here](#). Declassified British nuclear test civil defence research reports are in UK National Archives DEFE 16, [here](#).)



**Ryegrass (*Lolium perenne*) after 15 kt Buffalo-1 tower shot at Maralinga**

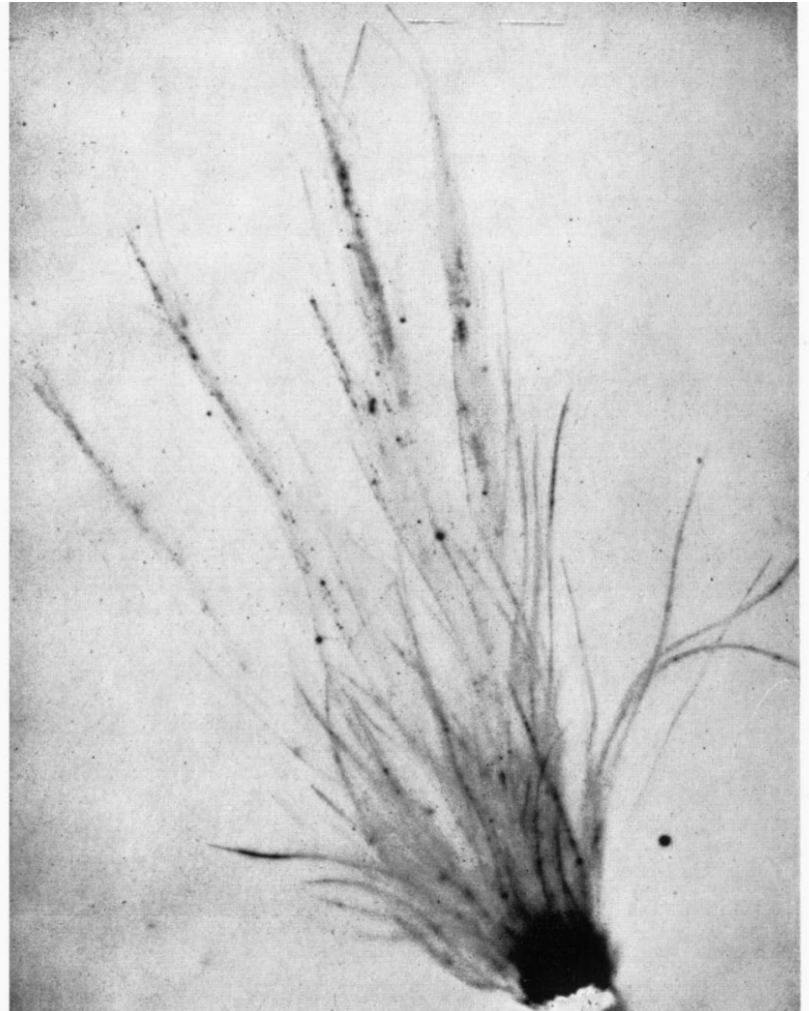
Above: X-ray film reveals that most fallout particles were retained at the stem base of grass, in civil defence research at the 1956 Maralinga tower burst Buffalo-1, as reported by John Freeman Loutit and Robert Scott Russell, *Operation Buffalo, Part 5, The entry of fission products into food*



chains, AWRE-T57/58, May 1959. Table 27 in this report shows that the water solubility of Buffalo-1 fallout was 80% for strontium nuclides (-89, -90, etc.) and iodine nuclides (-131, -132, -133, -135), 40% for Ba/La-140, 35% for Te-132 and Mo-99, 5% for Zr/Nb-95, and only 3% for Ru/Rh-103. Thus "solubility" depends entirely upon the nuclide involved. It is misleading to quote a percentage solubility figure without saying which nuclide is referred to.

The percentage solubility in water of the "overall" beta or gamma activity will obviously vary with time after burst, due to the changing composition of the fission product activity, because short half life nuclides (like iodine-131) which predominate in fallout soon after the explosion, will not be present a few months later.

Maralinga has silicate topsoil which produced glass-type (Nevada like) fallout particles for the Buffalo-1 tower burst, but the calcium carbonate substrata produced flaky Bikini-type calcium oxide fallout for the Buffalo-2 surface burst (photos below).



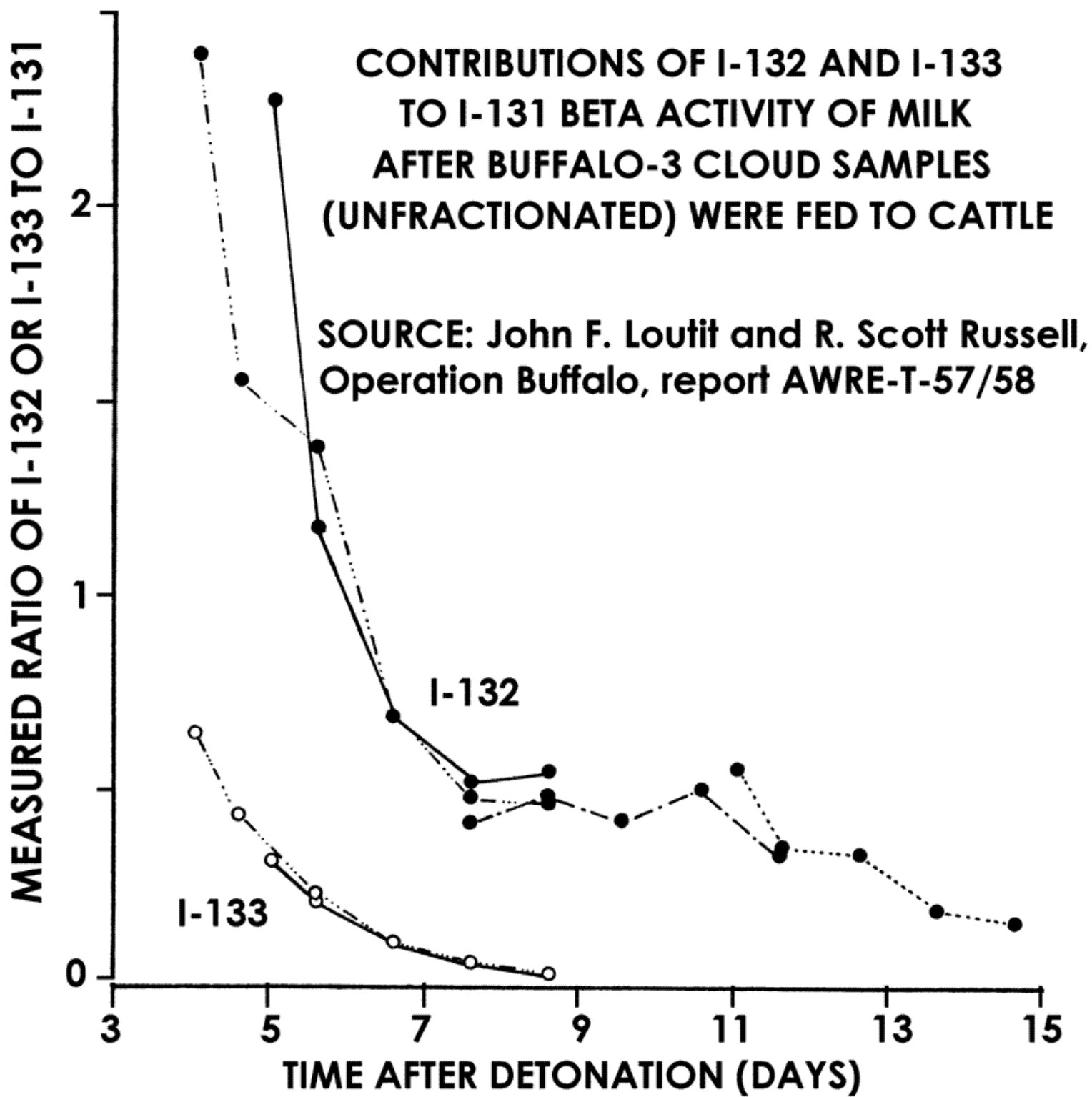
**Ryegrass (*Lolium perenne*) after 1.5 kt Buffalo-2 surface shot at Maralinga, after 2 cm rain**

ABOVE: fallout on grass from the Buffalo-2 nuclear surface burst at Maralinga after 2 cm of unexpected rainfall, from John Freeman Loutit and Robert Scott Russell, *Operation Buffalo, Part 5, The entry of fission products into food chains*, AWRE-T57/58, May 1959. A total of 15% of the Buffalo-2 fallout was retained by pasture grass, mainly in the stem base, and the rain has smeared the leaves with a coating of calcium oxide fallout.

Table 15 shows that threshing wheat after Buffalo-2 left 90% of the fallout on the chaff and only 10% on grain, and the authors spell out these implications plainly: "At a dose rate of 50 R/hr at 1 hour, 80 kg of flour would contain only 0.06 microcurie of Strontium-90. ... The hazards arising from the consumption of contaminated flour appear therefore to be smaller by a factor of more than a thousand than those arising from milk."

Therefore, limiting fallout contaminated milk consumption for a month after a nuclear explosion is an adequate countermeasure for ingested fallout, while the iodine-131 decays. Contaminated milk need not be wasted: it can be frozen, powdered, or processed into cheese or ice-cream that can be stored for a month while iodine-131 decays with its 8 days half-life, during storage. Alternatively, cattle can be kept in barns on winter fodder while the iodine-131 decays on fields outdoors. Temperature has no effect on radioactive decay, so it is safe to freeze radioactive fallout contaminated food while it undergoes rapid radioactive decay! (A more "hairy chested" option where the projected iodine-131 thyroid dose is above 25 R or 25 cSv, which is preferred by some in the nuclear industry, is obviously to simply administer 130 milligram potassium iodate tablets daily, and keep consuming the contaminated milk and water as normal; the thyroid is flooded with stable iodine which effectively blocks uptake of radioactive iodine isotopes.) Fallout uptake by the roots is relatively small and was well investigated in American nuclear tests.





Above: John Freeman Loufit and Robert Scott Russell determined the ratio of I-132 and I-133 activities to I-131 in milk for unfractionated cloud samples from the Buffalo-3 nuclear bomb test (AWRE T-57/58, 1959). Within the first few days, most of the total iodine radioactivity is from I-132. For fractionated fallout close-in to a surface burst, I-132 is even more important because it is less depleted from the local fallout than is I-131 (click here to see the depletion factors for all the major isotopes of biological uptake importance). The thyroid doses for the Rongelap inhabitants (exposed to ingested fallout-contaminated water from an open rainwater-collecting cistern for the first two days after the 1 March 1954 15 megaton Bravo test, 115 miles downwind) were initially underestimated by calculations based solely on I-131. Then in a paper published in April 1958 and reprinted in the June 1958 Congressional hearings on the *Biological and Environmental Effects of Nuclear War*, Dr Gordon



Dunning showed how the other iodine isotopes contribute to the early-time thyroid dose. Utilizing the experience of measuring iodine isotopes in UK milk during heavy nuclear testing by the USSR in 1961-62, the co-author of the Buffalo nuclear test fallout study, Robert Scott Russell of the Agricultural Research Council, Radiobiological Laboratory, England, wrote an interesting paper called "The Extent and Consequences of the Uptake by Plants of Radioactive Nuclides" which was published in the *Annual Review of Plant Physiology*, vol. 14 (June 1963), pages 271-294:

"Iodine-131 is ... of concern primarily as a source of exposure of infants who consume appreciable quantities of fresh milk, partly because of the very small size of their thyroid glands in which it is concentrated, and partly because milk is usually the most highly contaminated food. Doses to infants from iodine-131 have on occasions been considerably higher than those from any other component of fallout; for example, towards the end of 1961 it was estimated from the analysis of milk that the thyroid glands of infants fed on fresh milk in the United Kingdom would have received about 170 mrems. ... Caesium-137 which was deposited on foliage of plants appears to be retained relatively similarly to strontium 90, and like strontium it is readily removed from foliage by rain [L. J. Middleton, *Intern. J. Radiation Biol.*, 1, 387-402, 1959]. The concentration of caesium-137 within different tissues which results from direct contamination, however, can contrast very markedly with that caused by strontium-90. This is due to the mobility of caesium-137 within tissues; thus nearly 30% of the caesium-137 which has been deposited on the foliage of potatoes may reach the tubers, as compared with less than 1% of strontium-89 [L. J. Middleton and H. M. Squire, *Agv. Res. Council Radio biological Lab.*, Report ARCRL 8, pp. 60-61, H. M., Stationery Office, London, 1962]. ... Zinc-65, together with the induced activities, cobalt-59 and -60 and iron-55, has also been found to be the main source of radioactivity in fish and sea water soon after nuclear explosions [A. D. Welander, U. S. Atomic Energy Commission Report UWFL-55, 1958]. The low concentration of the carrier isotopes in water can cause these nuclides to be absorbed and concentrated to a spectacular extent in plants and animals. *Plutonium*. Because of its very long half life and high toxicity to animals consideration has been given to the entry into plants of the fissile element plutonium. **A very slow rate of absorption is to be expected because it forms high valency (usually 4 or 6) ions; this has been confirmed in several studies** and, over 1.5 years, grass grown in pot culture may absorb **less than 0.0001% of that added to the soil** [L. Jacobson and R. Overstreet, *Soil Sci.*, 65, 129-34, 1948; and P. Newbould and E. R. Mercer, *Agv. Res. Council Radiobiological Lab.*, Report ARCRL 8, 81-82, H. M. Stationery Office, London, 1962]."

The two Operation Buffalo fallout effects report authors, John Freeman Loutit and Robert Scott Russell, *both went on to debunk the longer term effects of fallout hype; see proof here and here.*

The authors of AWRE-T57/58 (which was the basis for the agricultural fallout sections in the UK 1959 and 1974 *Nuclear Weapons* civil defence book published by HMSO):

 [HTTP://WWW.BRITANNICA.COM/EBCHECKED/TOPIC/513207/ROBERT-SCOTT-RUSSELL](http://www.britannica.com/EBCHECKED/TOPIC/513207/ROBERT-SCOTT-RUSSELL)

## **ROBERT SCOTT RUSSELL**

BRITISH BOTANIST AND MOUNTAINEER, BECAME IN 1957 THE FIRST DIRECTOR OF THE AGRICULTURAL RESEARCH COUNCIL RADIOBIOLOGICAL LABORATORY, A FACILITY IN THE U.K. ESTABLISHED TO MONITOR AND PREDICT THE CONSEQUENCES OF NUCLEAR FALLOUT ON FOOD CROPS AND HUMAN NUTRITION. HE STUDIED AT IMPERIAL COLLEGE IN ENGLAND AND IN 1938 JOINED THE COLLEGE'S EXPEDITION TO THE ARCTIC ISLAND OF JAN MAYEN. THERE, ALONG WITH RESEARCH ON THE EFFECTS OF THE ARCTIC CLIMATE ON PLANT METABOLISM, HE REACHED THE SUMMIT OF THE PREVIOUSLY UNCLIMBED NORTHEAST PEAK OF THE EXTINCT VOLCANO BEERENBERG, THEREBY RENEWING THE ENTHUSIASM FOR CLIMBING THAT HE HAD DEVELOPED DURING HIS BOYHOOD IN NEW ZEALAND (B. FEB. 14, 1913, PENGE, ENG.—D. JULY 29, 1999, WANTAGE, ENG.)

**JOHN FREEMAN LOUTIT** CBE FRS<sup>[1]</sup> FRCP ALSO KNOWN AS 'IAN'. (19 FEBRUARY 1910 – 11 JUNE 1992) WAS AN AUSTRALIAN HAEMATOLOGIST AND RADIOBIOLOGIST. ... HE CONTRIBUTED SIGNIFICANTLY TO THE DEVELOPMENT OF IMPROVED TECHNIQUES FOR THE STORAGE AND TRANSFUSION OF BLOOD DURING THE SECOND WORLD WAR. AFTER THE WAR HE BECAME A LEADING RESEARCHER IN THE THEN NOVEL FIELD OF RADIOBIOLOGY. HE ESTABLISHED AND RAN THE MEDICAL RESEARCH COUNCIL'S RADIOBIOLOGY UNIT AT HARWELL FROM 1947 TO 1969. HE GAVE THE 1969 BRADSHAW LECTURE TO THE ROYAL COLLEGE OF PHYSICIANS ON THE SUBJECT OF MALIGNANCIES CAUSED BY RADIUM. HE WAS ELECTED A FELLOW OF THE ROYAL SOCIETY IN 1963.<sup>[1]</sup> HIS CANDIDATURE CITATION READ:

"DISTINGUISHED FOR HIS EXPERIMENTAL STUDIES OF TISSUE TRANSPLANTATION AFTER LETHAL DOSES OF IONISING RADIATION. SKILFUL EXPERIMENTS LED LOUITIT TO FORM THE OPINION THAT, CONTRARY TO THE PREVAILING VIEW, THE SURVIVAL OF IRRADIATED MICE AFTER THE IMPLANTATION OF HAEMATROPOIETIC TISSUE WAS DUE TO COLONIZATION BY LIVING CELLS. THE TRUTH OF THIS

**INTERPRETATION HAS BEEN RAPIDLY CONFIRMED. LOUTIT WAS THE FIRST TO RECOGNIZE 'SECONDARY DISEASE' IN IRRADIATED MICE RESTORED BY THE TRANSPLANTATION OF FOREIGN CELLS, AND HIS INTERPRETATION OF THE DISEASE AS THE CONSEQUENCE OF A REACTION OF THE GRAFTED CELLS AGAINST THEIR RECIPIENT IS NOW ACCEPTED. LOUTIT HAS FURTHER SHOWN THAT A SUBSTANTIAL PROPORTION OF MICE WITH LEUKAEMIA CAN BE CURED BY WHOLE BODY IRRADIATION FOLLOWED BY THE GRAFTING OF BONE MARROW CELLS. EARLIER, HE SEPARATED THE MECHANISMS OF ORIGIN OF CONGENITAL HAEMOLYTICS AND ACQUIRED ICTERUS AND DEVELOPED A PRACTICAL METHOD OF INCREASING THE STORAGE TIME OF BLOOD FOR TRANSFUSION. LOUTIT'S WORK IS FUNDAMENTAL TO AN UNDERSTANDING OF THE MECHANISM AND REPAIR OF RADIATION INJURY AND HAS IMPORTANT BEARINGS ON IMMUNOLOGY AND THE STUDY OF LEUKAEMIAS."**<sup>[2]</sup>

**BETA ACTIVITY IN ISLAND AND LAGOON LIFE, MEASURED AT 30 DAYS AFTER 10 MT MIKE**

SOURCE OF BASIC DATA: Lauren R. Donaldson, et al., *Radiobiological Studies at Eniwetok Atoll Before and Following the Mike Shot of the November 1952 Testing Program*, Applied Fisheries Laboratory, University of Washington, report UWFL-33 (WT-616), June 1953.

LAGOON ISLANDS (ENIWETOK ATOLL)	Japtan	Igurin	Rigili	Bogombogo- Bogallua	Engebi	Aomon- Aaraan	Runit
Live sample collection time (days after Mike detonation)	2	3	4	7	7	6	5
Distance from ground zero (km)	34	36	26	5.1	4.6	15	21
Lagoon water (Bq/g)	0.42	0.27	0.32	5.8	0.77		0.67
Reef coral (Bq/g)		9.2	250	50000	45000		580
Clam muscle (Bq/g)	0.92	2.5	13	900	170	38	33
Clam shell (Bq/g)		37	150	2100	750	300	65
Sea cucumber, body wall (Bq/g)	0.95	63	250	1800	870	980	200
Crab muscle (Bq/g)	0.81	1.7	30		6800	52	22
Crab shell (Bq/g)	2.7	20	380		13000	330	280
Lagoon plankton (Bq/g)		2300	1200	18000		1700	800
Omnivore fish muscle (Bq/g)	2.0	2.0	5.5	370	130	40	4.3
Omnivore fish bone (Bq/g)	5.5	4.0	15	2200	930	180	17
Carnivore fish muscle (Bq/g)	4.3	2.2	2.7	130	53	6.7	2.3
Carnivore fish bone (Bq/g)	5.0	6.3	7.7	270	130	30	11
Land plants (Bq/g)	4.0	270	1700		32000	1500	670
Lungs of rats (Bq/g)						17	
Muscle of rats (Bq/g)						16	
Bone of rats (Bq/g)						280	
Lungs of land birds, terns (Bq/g)			32				
Muscle of land birds, terns (Bq/g)	3.7	4.3	12			6.0	9.0
Bone of land birds, terns (Bq/g)	6.2	17	380			14	12





As at Bikini Atoll (scene for 42 megatons of fission yield in 23 nuclear tests), *cesium-137 is only important in food chains in soil deficient in potassium, and cesium-137 uptake by crops at Bikini was diluted by adding potassium chloride fertilizer to soil (potassium is chemically similar to cesium, and thus works by the same dilution mechanism as iodine tablets for thyroid protection)*. (Strontium-90 uptake isn't a problem, as illustrated in the previous post.) Note also that Lawrence Livermore National Laboratory found that the "effective half-life of cesium-137 on Bikini, Eniwetak, and Rongelap Atolls is around 8 to 9.8 years", not the laboratory radioactive half life figure of 30 years! This is because cesium compounds are relatively water-soluble and cesium-137 (as with iodine-131 and strontium-90) is fractionated in fallout (coated on the outer surface of fallout dust, not fused inside the particles) so it dissolves in rain and is soon weathered out of the local environment, ending up in the ocean (where it's totally insignificant compared to the immense natural radioactivity of sea water from potassium-40). Similarly, if you eat cesium-137, it doesn't build up in your body with a 30 year half life, but is flushed out with water with an effective half life of only about 3 months!

"Large-scale field experiments on Bikini Island have been used to optimize the required amount and application rates of potassium (Figure 3). The results from these experiments show that a single application of 2000 kg per ha of potassium can be effective in reducing the cesium-137 uptake in coconut meat (and juice) to about 5% to 10% of the pretreatment level. Multiple applications (over several months) of the same total amount of potassium produce even better and more consistent results. Moreover, the concentration of cesium-137 in the coconuts following remediation remains low for an extended period of time, so the need for continuous effort and retention of scientific and technical expertise is minimized (Robison *et al.*, 2004)." –

<https://marshallislands.llnl.gov/bikini.php#remed>



# Planning for survival

## Stay at Home

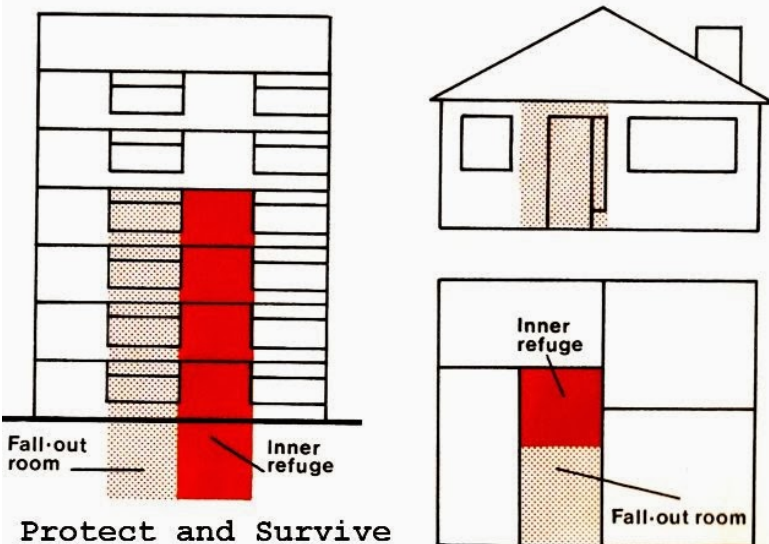
Your own local authority will best be able to help you in war. If you move away – unless you have a place of your own to go to or intend to live with relatives – the authority in your new area will not help you with accommodation or food or other essentials. If you leave, your local authority may need to take your empty house for others to use. So stay at home.

## Plan a Fall-out Room and Inner Refuge

The first priority is to provide shelter within your home against radioactive fall-out. Your best protection is to make a fall-out room and build an inner refuge within it.

### First, the Fall-out room

Because of the threat of radiation you and your family may need to live in this room for fourteen days after an attack, almost without leaving it at all. So you must make it as safe as you can, and equip it for your survival. Choose the place furthest from the outside walls and from the roof, or which has the smallest



**Protect and Survive**  
UK Government, May 1980

amount of outside wall. The further you can get, within your home, from the radioactive dust that is on or around it, the safer you will be. Use the cellar or basement if there is one. Otherwise use a room, hall or passage on the ground floor.

## Now the Inner Refuge

Still greater protection is necessary in the fall-out room, particularly for the first two days and nights after an attack, when the radiation dangers could be critical. To provide this you should build an inner refuge. This too should be thick-lined with dense materials to resist the radiation, and should be built away from the outside walls.

### Here are some ideas:

Make a 'lean-to' with sloping doors taken from rooms above or strong boards rested against an inner wall. Prevent them from slipping by fixing a length of wood along the floor. Build further protection of bags or boxes of earth or sand – or books, or even clothing – on the slope of your refuge, and anchor these also against slipping. Partly close the two open ends with boxes of earth or sand, or heavy furniture.



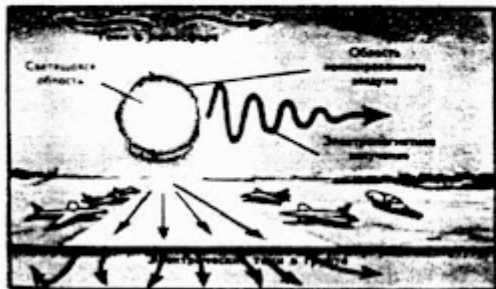
**ABOVE:** the May 1980 British Government "Protect and Survive" and "Domestic Nuclear Shelters" civil defence handbooks, issued after the USSR invaded Afghanistan in 1979 and exceeded the USA in the nuclear arms race, was based on: (1) British government research on civil defence effectiveness at the Hiroshima and Nagasaki nuclear explosions (linked here), (see also the list of reports linked here), (2) Australian-British Government research on civil defence at Operations Hurricane, Totem, Buffalo and Antler in nuclear tests in Australia from 1952-56 (see also here), (3) Blitz bombing shelter experience in London during WWII, and (4) radiation shielding experiments on improvised fallout shelters. All of this is totally ignored by biased "historians" and politicians who falsely assert – contrary to hard evidence – that nothing can absorb thermal and nuclear radiation, extinguish fires in the Hiroshima firestorm with water buckets, or deflect blast winds from a nuclear explosion.





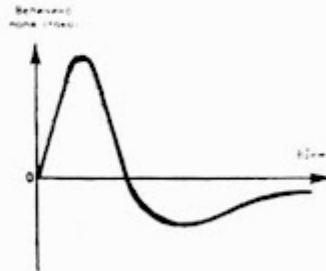
# ЭЛЕКТРОМАГНИТНЫЙ ИМПУЛЬС

При ядерных взрывах возникают электромагнитные поля, которые создают импульсные электрические токи и напряжения в воздушных и наземных проводных и кабельных линиях, в антеннах радиостанций, а также радиоизлучение, распространяющееся на большие расстояния.



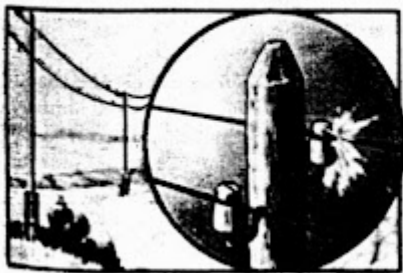
Электромагнитное поле и ток в воздухе и грунте возникают в результате образования в зоне взрыва светящейся области и области ионизированного воздуха, создающей проводящие радиопуть.

Наведенные токи и напряжения представляют собой кратковременный импульс, по своим характеристикам близкий к импульсу, вызванному молниевым разрядом. Его длительность составляет несколько микросекунд.

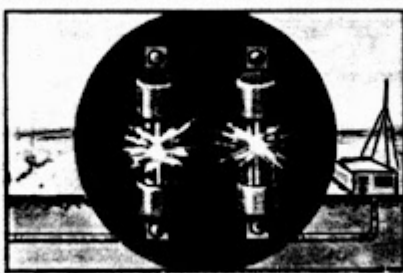


При ядерных и в частности взрывах в радиусе нескольких километров от центра эпицентра, взрыва перенапряжения между проводами воздушных линий связи или электрических сетей и между линиями кабелей линии и оболочкой земли, несколько десятков тысяч вольт наведенные импульсы могут распространяться по линиям на большие расстояния от места ядерного взрыва.

## ВОЗНИКШИЕ ПРИ ВЗРЫВАХ ПЕРЕНАПРЯЖЕНИЯ СПОСОБНЫ:



возникать массовые электро- и радиотехнические аварии



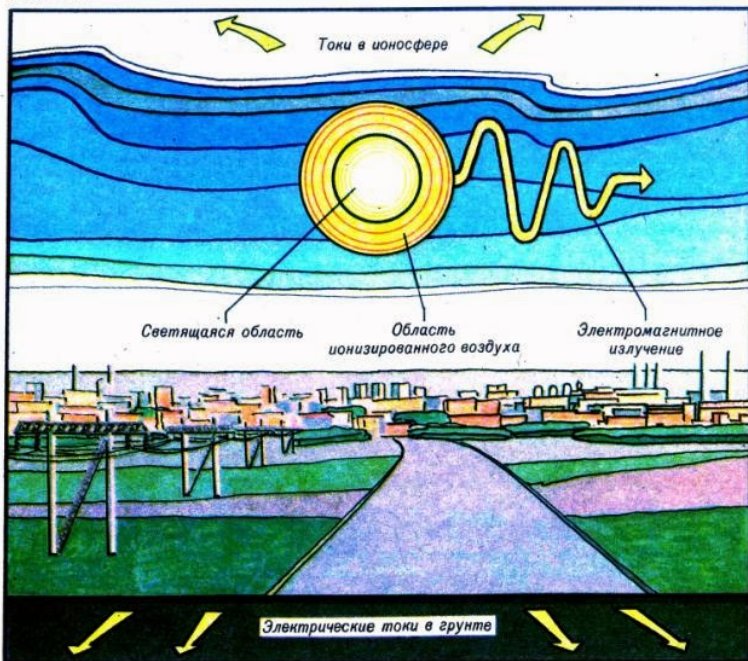
вызывать перегорание элементов электро- и радио аппаратуры или массовое срабатывание средств защиты



поражать обслуживающий персонал

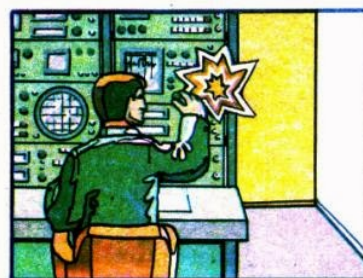
# ЭЛЕКТРОМАГНИТНЫЙ ИМПУЛЬС И ЗАЩИТА ОТ НЕГО

КРАТКОВРЕМЕННЫЕ РЕЗУЛЬТИРУЮЩИЕ ЭЛЕКТРИЧЕСКИЕ И МАГНИТНЫЕ ПОЛЯ, ВОЗНИКАЮЩИЕ ВО ВРЕМЯ ЯДЕРНОЙ РЕАКЦИИ ВСЛЕДСТВИЕ РАСПАДА АТОМОВ, ПРЕДСТАВЛЯЮТ СОБОЙ ЭЛЕКТРОМАГНИТНЫЙ ИМПУЛЬС (ЭМИ) ЯДЕРНОГО ВЗРЫВА. ЭЛЕКТРОМАГНИТНЫЕ ПОЛЯ СОЗДАЮТ ИМПУЛЬСНЫЕ ЭЛЕКТРИЧЕСКИЕ ТОКИ И НАПРЯЖЕНИЯ В ВОЗДУШНЫХ И НАЗЕМНЫХ ПРОВОДНЫХ И КАБЕЛЬНЫХ ЛИНИЯХ, А ТАКЖЕ РАДИОИЗЛУЧЕНИЯ, РАСПРОСТРАНЯЮЩИЕСЯ НА БОЛЬШИЕ РАССТОЯНИЯ

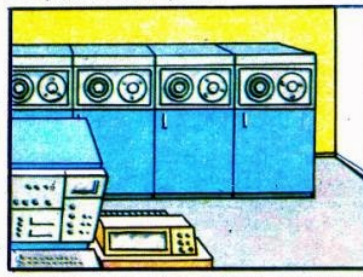


Е. П. КУЗЬМЕНКО, О.А. КОРОЛЕВ, В. И. ЗЕМИТАН  
**ГРАЖДАНСКАЯ  
ОБОРОНА**  
Издание пятое

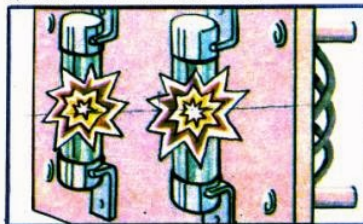
ВОЗНИКШИЕ ПРИ ЯДЕРНЫХ ВЗРЫВАХ ПЕРЕНАПРЯЖЕНИЯ СПОСОБНЫ:



выводить из строя аппаратуру и поражать обслуживающий персонал



искажать, полностью стирать магнитные записи, лишать «памяти» ЭВМ



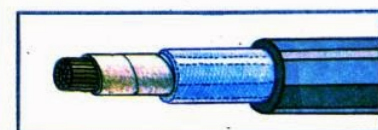
вызывать короткие замыкания в электро- и радиотехнических устройствах, массовое срабатывание средств защиты

СПОСОБЫ ЗАЩИТЫ ОТ ЭЛЕКТРОМАГНИТНОГО ИМПУЛЬСА

Воздействие электромагнитного импульса на наружные и внутренние линии аппаратуры резко снижается при применении специальных мер защиты

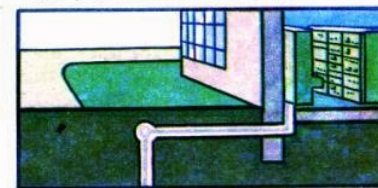


Наиболее эффективным способом защиты радиоэлектронной аппаратуры, расположенной в сооружениях, является использование электропроводящих (металлических) экранов, значительно снижающих наводимые напряжения



Применение экранированных кабелей; выполнение радио- и электротехнических устройств поблочно, с защитой каждого блока и всего устройства в целом

Надежное заземление аппаратуры



ABOVE: Secrecy on civil defense against nuclear weapons effects has always been a head-in-the-sand fallacy because potential enemies are well aware of the effects. For example, Russia tested nuclear weapons from August 1949 on, and had its own data on the effectiveness of civil defense



countermeasures. After three high altitude 300 kt nuclear explosions in 1962 for Russia's Operation K system proof test for the original Moscow ABM system, Russia gained extensive experience of EMP effects, so American secrecy was of no use in preventing Russian knowledge of EMP. It merely hinders free world (not communist world) civil defense. There is no security in making civil defense effectiveness data unavailable to those who need it.



# THE DISPATCH

Volume 3, Issue 2

Defense Threat Reduction Information Analysis Center

June 2013

## This Issue

Program Manager's Corner	1
Validation of Nuclear Airblast Codes	2
Are Airblast Codes Validated for Urban and Suburban Areas?	2
Recent SHAMRC Code Improvements for Blast Modeling	4
Building Effects on Cloud Rise from Nuclear Detonations in Urban Terrain	6
Building Effects on Airblast from Nuclear Detonations in Urban Terrain	7
Modeling Nuclear Blast in Urban Terrain with NucFast	10
DTRIAC Collection Additions	12
This Quarter in History	15
Ask the IAC	16

## Contact Us

dtriac@dtra.mil  
or visit us at  
www.dtriac.dtra.mil



## From the Program Manager

Welcome! DTRA realigned DTRIAC from the J3/7 Operations/Exercise and Readiness Directorate to the J9 Research and Development Directorate, and I was designated as the Interim Program Manager (PM) for DTRIAC until a permanent PM is brought on board. I support Dr. Steven Wax, Chief Scientist, DTRA/J9ST. The J9 and J9ST look forward to having DTRIAC as part of our organization, and we plan to continue increasing awareness of DTRIAC functions and capabilities.

J9 personnel are excited to contribute articles on our various research efforts in support of DTRA's combating WMD mission. We also plan to finish the NextGen STARS development that was started under J3/7. Our goal is to improve the inclusiveness of and access to DTRIAC for the entire agency.

This issue of The Dispatch focuses on airblast phenomena. DTRA and its predecessor organizations have a long history of research in this area, and DTRA continues to perform a variety of research in this field. Some of the articles detail effects of nuclear detonation in an urban environment. Other articles describe airblast codes, which have been updated using improved modeling and methodology, and their validity in urban environments.

Please contact us directly if you ever have any questions or comments related to DTRIAC at [dtriac@dtra.mil](mailto:dtriac@dtra.mil).

Thanks,



UPSHOT-KNOTHOLE: Mr. Inquest filming ENCORE test airblast, May 8, 1953



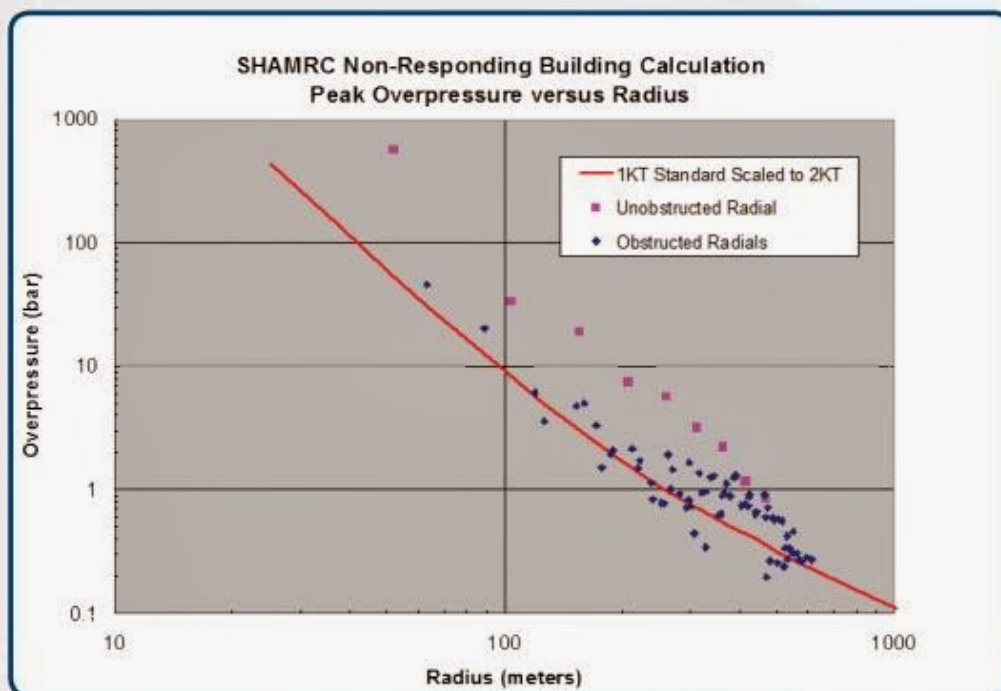
Building Effects on Airblast from Nuclear Detonations in Urban Terrain *(continued)*

Figure 1. Urban pressure distribution along different radials (ARA, Inc.)

While the overpressure is drastically changed by the presence of buildings, the dynamic pressure is modified even greater in comparison to the ideal. The dynamic pressure is stagnated at each encounter with a building and is enhanced along streets and alleys. There are regions of nearly complete stagnation (no dynamic pressure) in regions that would have very high dynamic pressures over an ideal surface. The high dynamic pressures and dynamic impulses aligned with streets will move any loose objects such as cars, trucks, mailboxes, or sidewalk stands hundreds of feet. Cars will be piled on top of one another and block roads and access to buildings closer to the detonation point.

Many recent calculations have been criticized because they assume the buildings are nonresponding and perfectly rigid. The argument for this assumption is that the materials from which the structures are made have a density that is at least 2,000 times the density of air. This means that when a shock wave strikes a structure, the air will move 2,000 times farther than the structure in the same time interval. Thus while the building is moving 1 cm, the shock has moved more than 20 m, and the energy lost from the shock is a small fraction of 1% of the blast energy.

As an example of this behavior, an experiment was conducted at the Ernst Mach Institute in Freiburg, Germany, in which a model house was constructed of steel and exposed to a blast wave in a shock tube. Several shadowgraph pictures were taken as the shock wave engulfed the structure. Reflections from the walls and roof could be readily identified. A second model house was constructed from balsa wood using the same dimensions as the steel house and exposed to the same blast pressure.

When the shadowgraph pictures were compared, no distinction could be made between the steel and balsa wood shock reflections. The balsa wood model did not measurably move over the entire time of the shock interaction with the structure.

Another series of experiments<sup>1,2</sup>, in the United Kingdom, were conducted with a model city built from solid concrete buildings. Pressure gauges monitored the loading at many points on buildings throughout the city. A high-explosive charge was detonated at a height of burst such that the Mach stem would be higher than the buildings as it passed over the model city. The experiments were criticized for using nonresponding structures. Therefore, the city was carefully reconstructed of thin mirror glass on light metal frames with the gauges installed at the same locations as the concrete city, and the experiments were repeated.



**Building Effects on Airblast from Nuclear Detonations in Urban Terrain** *(continued)*

Figure 2 shows overpressure traces from four locations within the city. First note that there is no difference in arrival time at any of the locations. The upper left waveforms (B89F) are from the front of a building near the farthest distance from the detonation. The waveforms on the upper right (B88B) were taken on the back of a building directly in front of B89. The waveforms on the lower left were from the roof of a building near the center of the city. The lower right waveforms are from the front of the building closest to the detonation. The red curves are from the concrete buildings and the blue curves are from the mirror glass buildings.

There is no appreciable difference between the waveforms. When all of the measured overpressure waveforms were compared, half of the gauges from the glass buildings were higher than those from the concrete buildings and half were below by about the same amount. Furthermore, the impulses showed the same relative amplitudes. The thin mirror glass corresponds to about an 8-inch-thick concrete wall at full scale, so this is indeed a realistic scale for responding buildings.

In conclusion, the blast overpressure in an urban environment is generally higher than for the free field. This is caused by reflections from buildings and funneling of energy down streets. For free field overpressures above approximately 5 psi, the urban pressures are nearly always higher at the same range. As the overpressures drop below about 2 psi, there are relatively more occurrences of overpressures below the ideal surface curve, but the majority of points are above the ideal curve. The approximation of using perfectly reflecting, nonresponding buildings has been proven true by multiple experiments.

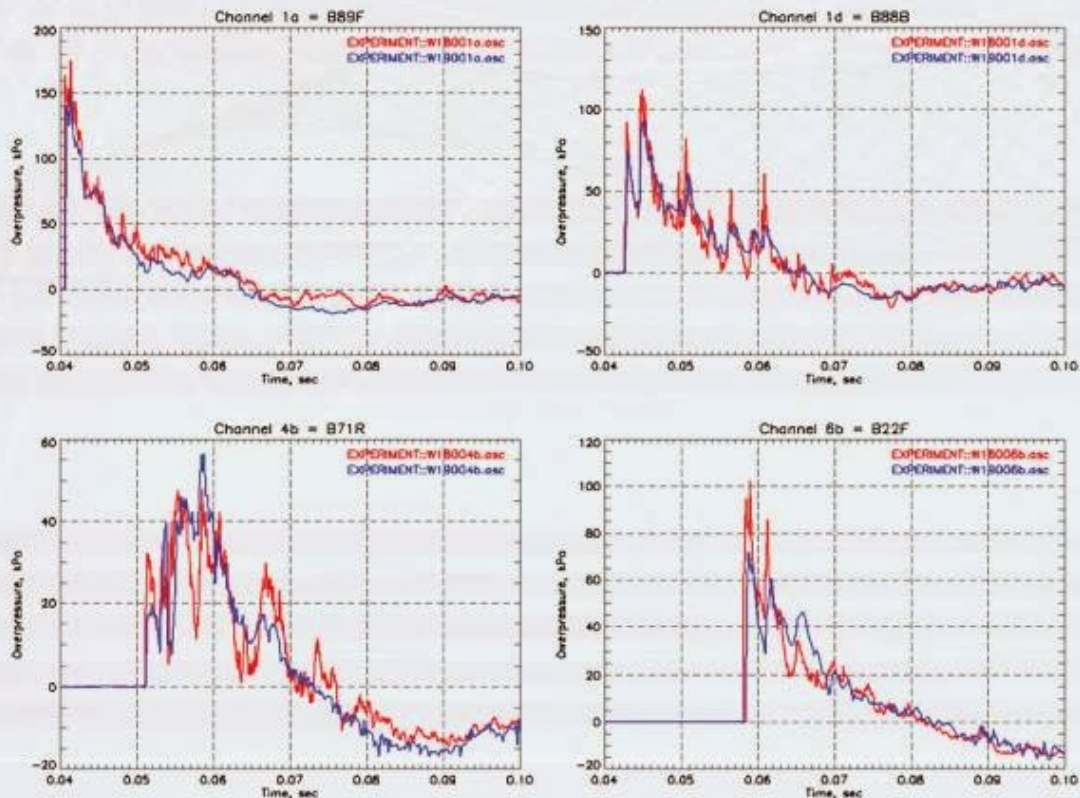
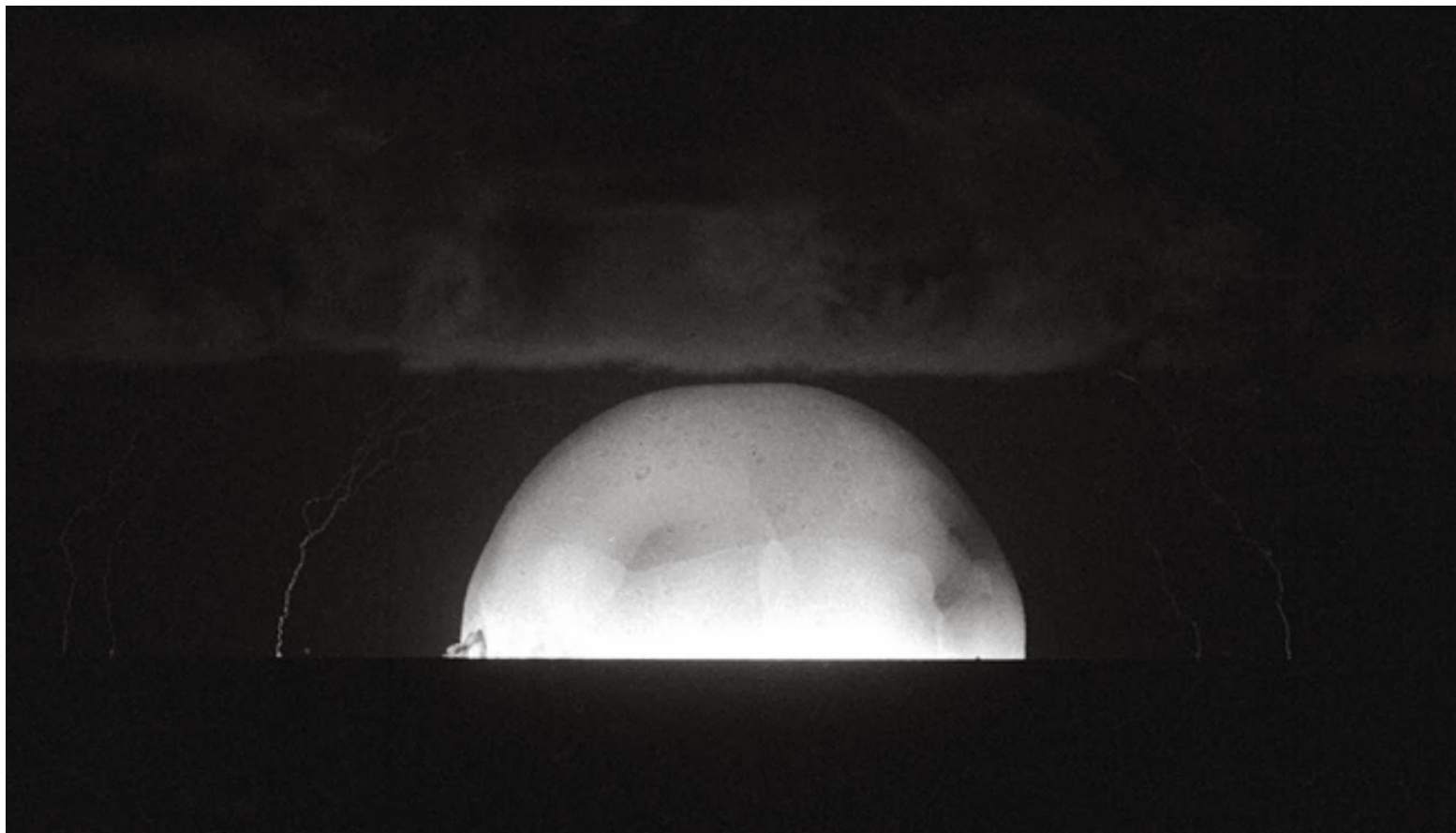


Figure 2. Comparisons of pressure records for concrete and mirror glass structures<sup>1</sup>

**References**

1. Martin, A.J., "WINDRUSH 18 – Multi-Storey Complex Flowfield Pressure Calculation," AWE Report Number AWE/DWE31/02/015; SSM/P724, February 2002 (unpublished).
2. Hunt, S., et al., "WINDRUSH High Explosive Tests," AWE (unpublished).





Above: Five flashes of lightning around the 1952 Mike nuclear test fireball; air ionization due to the initial nuclear radiation shorted out the natural potential of the atmosphere causing the discharges (as predicted by Enrico Fermi prior to the 1945 Trinity test). Contrary to the Glasstone and Dolan textbook, however, modern city skylines provide a typical 100 fold reduction in the transmission of initial radiation. On top of that concrete terrain shielding factor, there is additional shielding from the building a person is located within. Below: Trinity test photos (16 July 1945, 19 kt on top a 100 ft tower at Alamogordo, New Mexico):





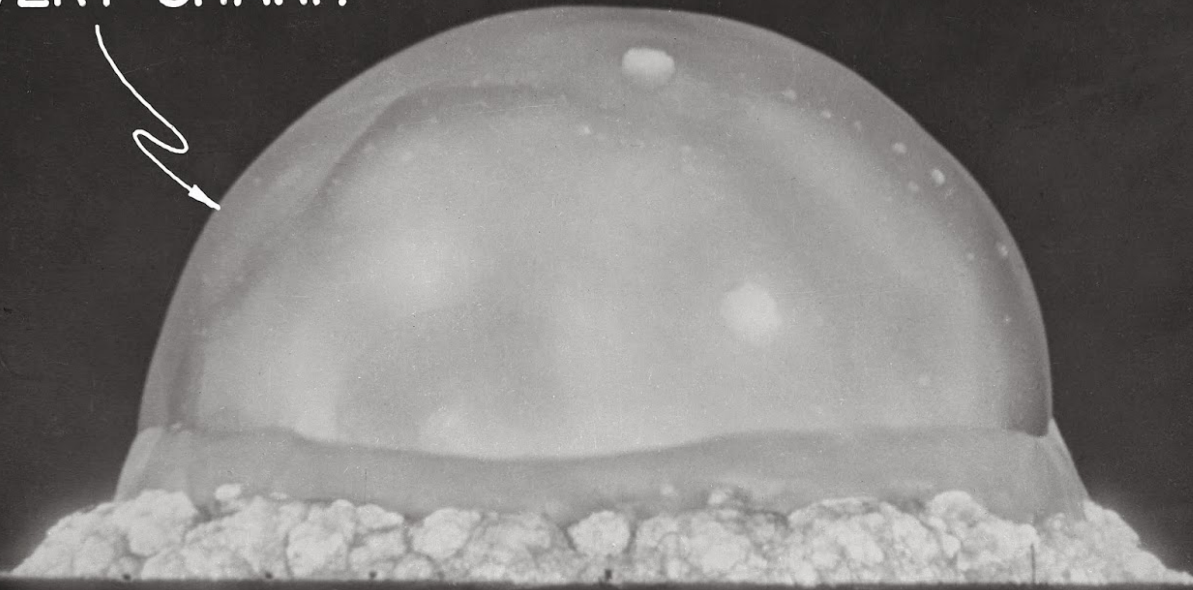
0.025 SEC.  
N

100 METERS



25 MS. ON

THUS FAR THE FLAME FRONT AND THE SHOCK FRONT HAVE BEEN COINCIDENT, HENCE THIS EDGE IS VERY SHARP.



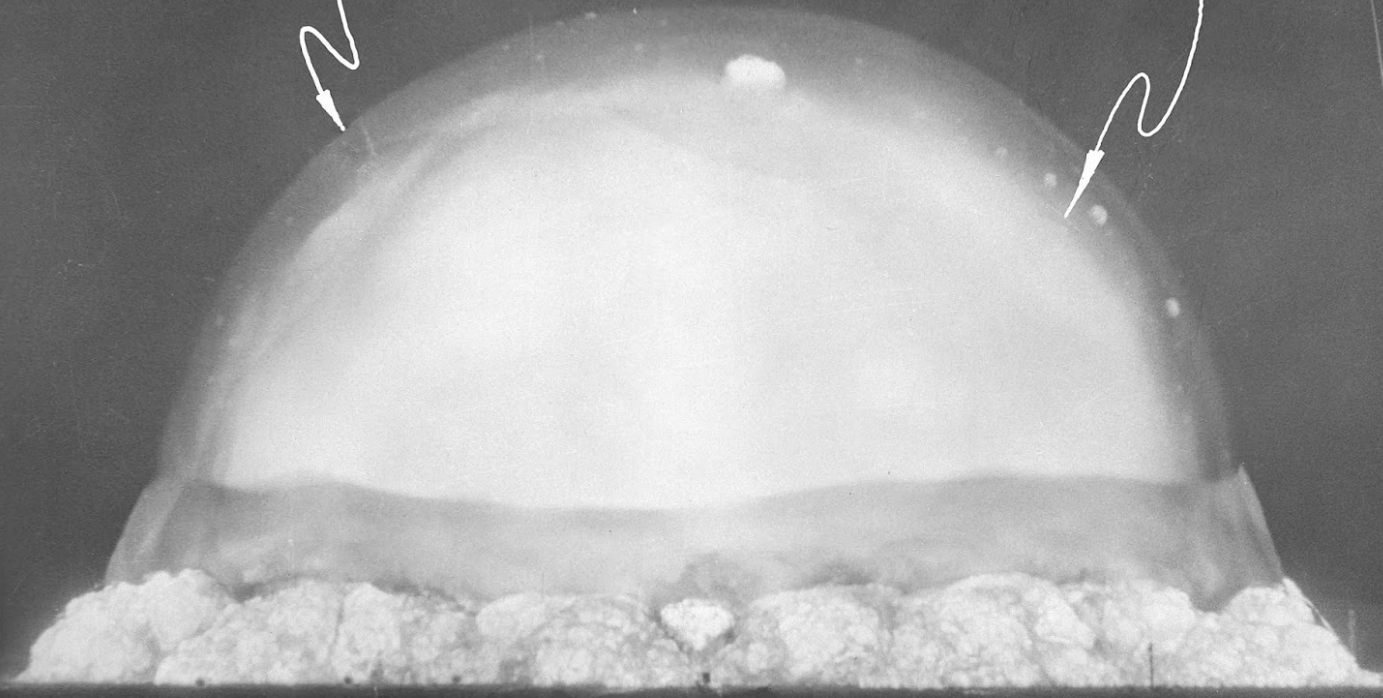
THE BELT IS NOW ABOUT THE SAME TEMPERATURE AS THE BALL OF FIRE.





34 MS.  
N

THE SHOCK WAVE IS MOVING OUT  
FROM THE FLAME FRONT.



THE BELT IS NOW COOLER THAN THE  
FLAME FRONT AND IS APPROXIMATELY A  
CONIC SEGMENT.





7.0 SEC.  
N

— 100 METERS





216

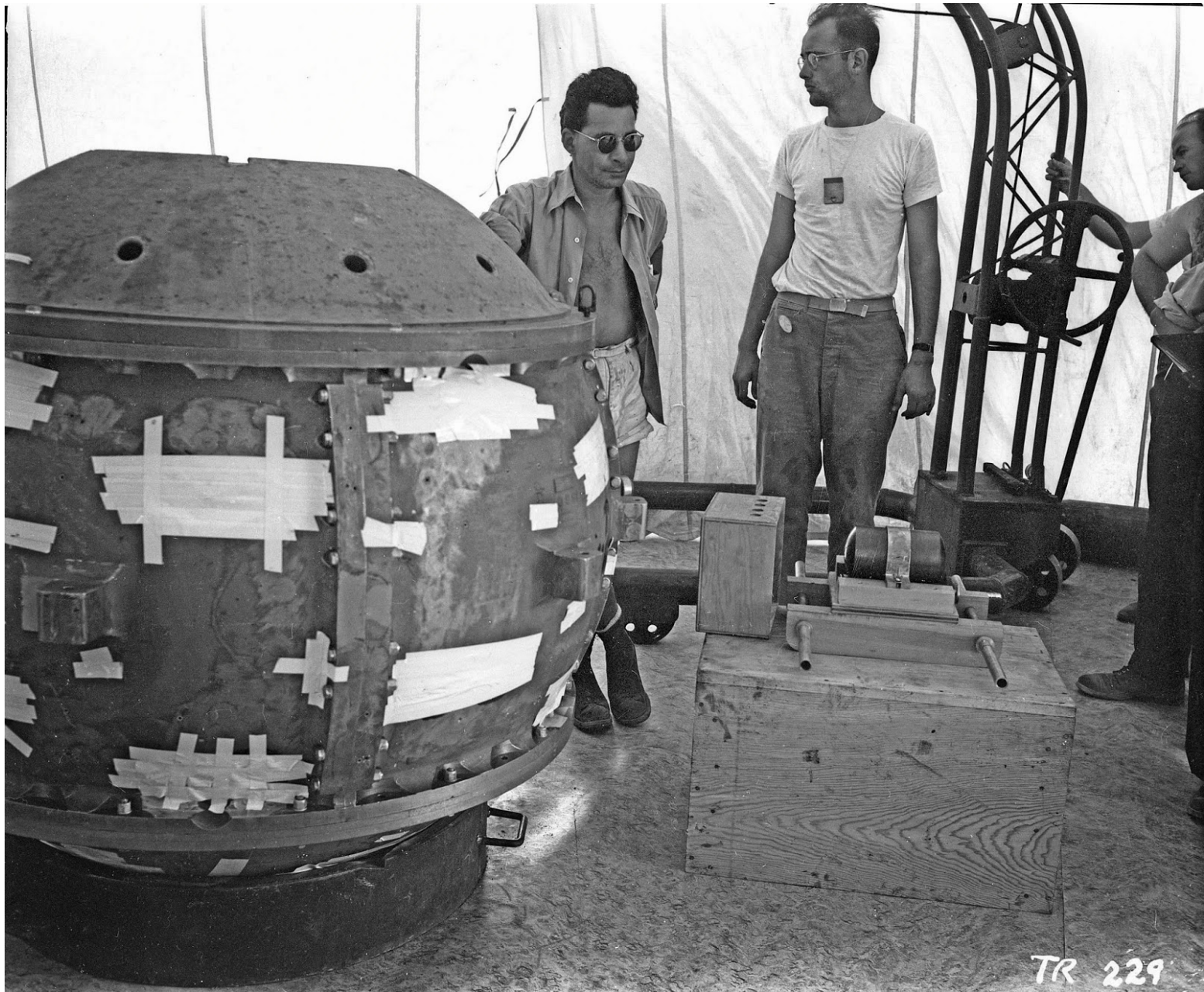


9.0 SEC.  
N

100 METERS



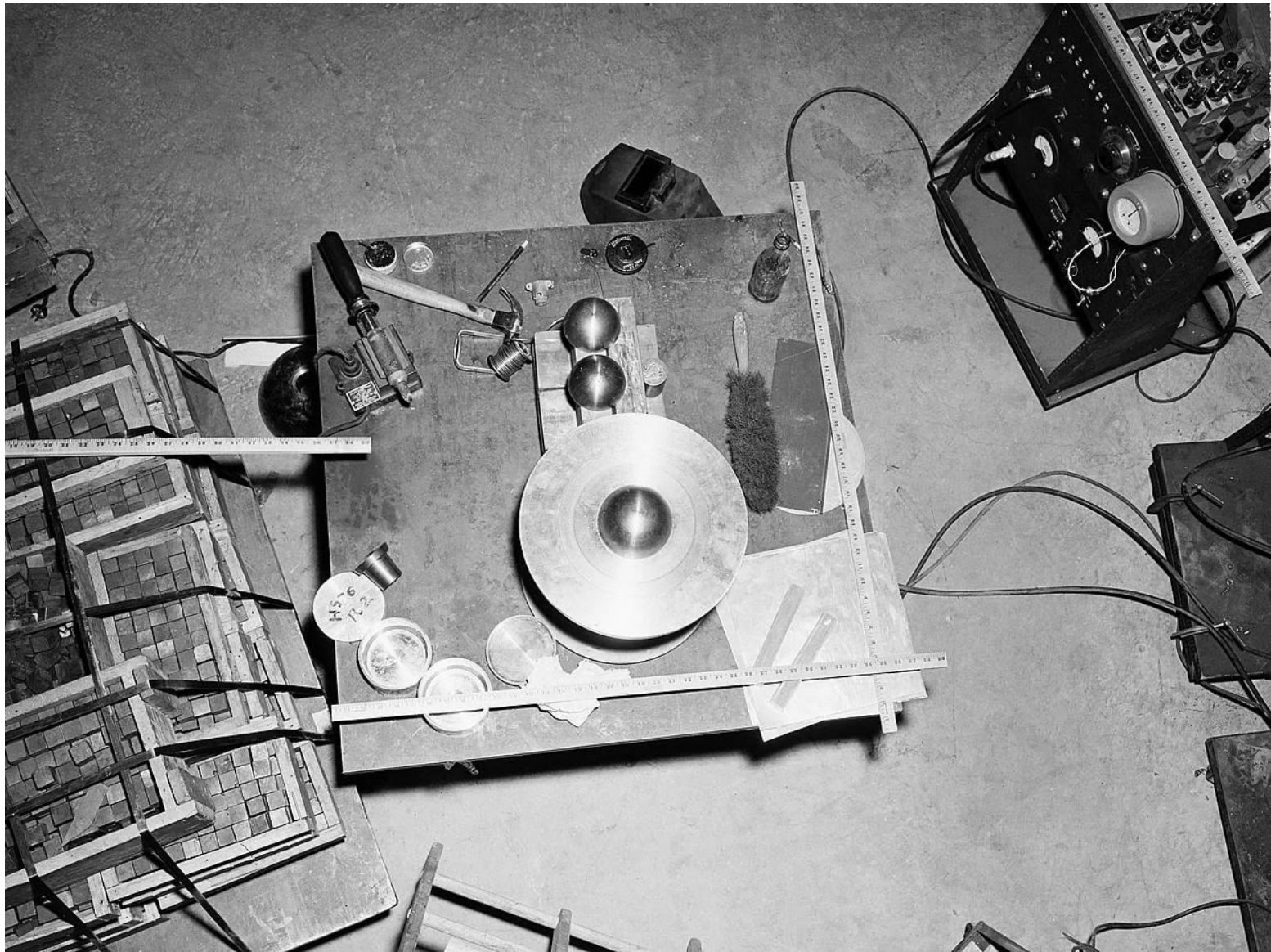




TR 229









# Untold Facts

## ABOUT THE H-BOMB



As close as 1,000 ft. from the A-blast center in Hiroshima, these "American-type" buildings were left standing. Razed areas were gutted by fire.



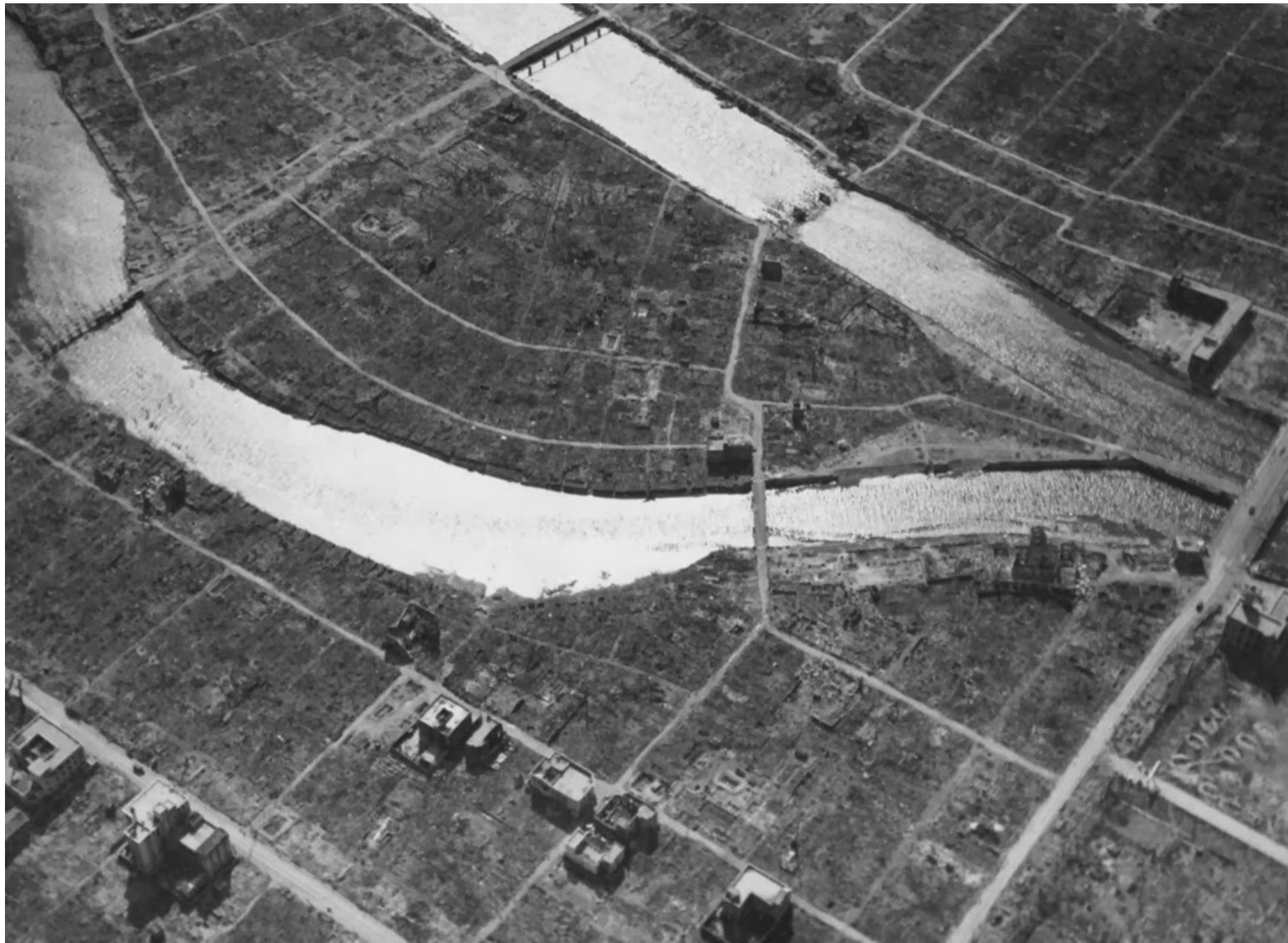
Still less than 1,000 ft. from ground zero, the buildings shown shielded many people from death. Note trees standing, trolley operating as usual.













**“The entire Free World, despite its intellectual sophistication, is being held hostage by fear. This fear of the unknown has proliferated for the past 80 years through propaganda, unsound pronouncements of world leaders, and misleading labels compounded by a public press that has neglected its own mandate to seek out and tell the truth.”**

**– James W. Hammond, *Poison gas: the myths versus reality*, Preface (Greenwood Press, 1999).**

**Conflict resolution or conflict perpetration? The threat to civil defense from the intolerant idealists who caused WWII and prevented proper civil defence in the 1930s (28 October 2013 update)**

“It is easy to forget how simple and superficially alluring wallowing in the feeling of injustice or retribution for past hurt can be. The alternative requires the development of a wholly new narrative, the admission that the other side might have a point. So leaders have to speak of the possibility of reconciliation with those for whom history has been about the utter unacceptability of reconciliation. This is real political leadership, and it takes real character to do it.”





- Tony Blair, *Guardian* 24 October 2013, Foreword to *The Irish Diaries (1994-2003)* by Alastair Campbell, published next week by The Lilliput Press.



"On May 14, 1938, in Berlin's Olympic Stadium, the English football team were blackguarded by the Foreign Office and the Football Association into giving the "Heil Hitler" Nazi salute ... But that picture of impressionable footballers obeying orders from mutton-headed apparatchiks went round the world and became a lasting source of shame to this country. This was, after all, just weeks after Hitler had annexed Austria and came at a time when plans for the Final Solution were well advanced. ... Was Hitler made more reasonable by that salute, or by the willingness of the world to offer him a massive

propaganda boost two years earlier at the Berlin Olympics by turning up without a squeak of protest? Of course not, which leads to some interesting parallels with today. ... This idea that to criticise totalitarianism is a breach of the Olympic spirit is as wretched a perversion of logic as even the Nazis ever attempted. ... China is a menace to the civilised world for many other reasons, ranging from its support for renegade regimes such as the government of Sudan, who used Chinese weaponry to commit the Darfur massacres, to its shameless emergence as the number one polluter. ... Over the next 20 years, they will create as much pollution as the rest of the world has since the birth of the industrial revolution. This is a shocking statistic worthy of condemnation anywhere and everywhere. If British athletes feel strongly about that, why shouldn't they speak out?" – David Mellor.

ABOVE: former Cabinet Minister David Mellor writes that the "Shameful picture of England squad giving Nazi salute ... 70 years later, why do we still suck up to dictators?" Answers abound: Pacifism. Appeasement. Anything is better than everyone on earth being gassed. In the 1930s, the popular journalism claim – as Professor Kendall points out on page 110 of *Breathe Freely* – was that **1 ton of mustard gas "is sufficient to kill 45,000,000 people"**, despite the fact that during World War I given cheap relatively primitive and easy WWI anti-gas countermeasures, **it actually took 8 tons of mustard gas to kill 1 person**, as Kendall points out on page 45, which is 1/8 of a death per ton, compared to the theoretical "ideologue" estimate of 45,000,000 deaths per ton. In other words, the war effects exaggerations in the 1930s exaggerated the effects of gas by a factor  $(45,000,000)/(1/8) = 360,000,000$ . This lying is why pacifism turned evil: ideologues lie because they are wrong and know they are wrong so they are "forced" to lie in order to sell their dysfunctional propaganda to the media. They home in on anything joe public can't understand clearly just as in olden times evil dictators used witchcraft superstitions as a scapegoat for all ills. Any smokescreen to deflect attention from reality!

A couple of additional points. First, Chinese pollution effects are exaggerated by Mellor's political ideologues, because all 21 IPCC 2007 models of climate change ignored negative feedback from water cloud cover which is a natural thermostat, preventing a runaway greenhouse effect (which would definitely have happened long since due to water if water had a purely positive feedback, which the IPCC wrongly assumes). The continued ocean heating effects (like ice melting) while the lower troposphere failed to continue to warm since 1998 is purely down to the massive heat capacity of the ocean and the slow mixing of the warmed upper ocean (above the thermocline) to greater depths. It takes decades for the air to heat up the entire ocean slightly, its a slow process. This slow transfer rate of temperature rises established in the air prior to 1998 is not a continued atmospheric heating effect. It's merely a slow response of the ocean, a time lag effect due to the slow transfer of heat through the depths of the ocean (warm water floats on cool water, which inhibits heat transfer). Second, the Chinese communists are largely funding the West through the debt situation.

America has over \$12 trillion national debt, Britain over £1 trillion. As in Germany during the 1930s, state spending on national socialism and other things (wars for example) is being funded not by taxation, but by national debt. The governments have to be elected, and to do that they must keep the flow. They must also be popular by spending lots of money on social things like health



industries (which nobody objects to), and this huge state socialist spending can't be funded by low taxes, so it must come from the national credit card – debt. The Chinese, bless them, have a different system to old USSR and actually manage to combine communism with capitalism in such a way they can save up loads of money and lend it out (directly or indirectly by investment schemes) to cash-strapped Western countries. The result? We owe a lot of money to communists (either directly or indirectly). Obviously at some point common sense dictates that the interest repayments will result in pressure for reform, particularly if there is another big slump for the West like the 1929 Wall Street crash.

Civil defence comes into this directly, because in 1929 anyone who announced that bankrupt cash-strapped, disarmed, democratic Germany would have turned into a threat to world peace would be laughed out of town. But contrary to today's popular historians, it wasn't just popular eugenics pseudoscience that lay behind WWII. It was debt. Hitler borrowed his way into war. Massive national socialist state spending to build the autobahn, the V1 cruise missile, the V2 IRBM, full employment, etc., had to be funded from somewhere. Where did Hitler get all the cash to reverse Germany's fortunes in a few years after the Wall Street crash of 1929 without a return to 1923-type German hyperinflation? The Nazis were bankrolled by debt. This was ignored by pacifists and the popular media at the time. This goes some way to explaining why Hitler and his gang were so keen to use their massive army to keep invading. They had to keep expanding their borders to build up financial security. Their "peace" promises were dud because they would have gone bankrupt – returning to the ruinous 1923 days of hyperinflation – if they didn't keep seizing new territory. This was the hidden debt picture. Like the USSR in the 1980s, Nazism wasn't financially viable and would have gone bust in a real arms race (which simply didn't happen in the 1930s despite Chamberlain's contrived lies to the contrary later). This is why **financially stable** democracies are needed to prevent war, not appeasement or weapons effects exaggerations or lying "peace treaties" which were not worth the paper they were written on. Weart's 1998 book *Never at War* shows that to have world peace, we need financially stable democracies not lying peace treaties, not lying disarmament brainwashing, not exaggerated weapons effects delusions, not a ban on civil defence or survival in disasters. (See page 33 of my review of *Watermelons*, linked here.) These rude, ignorant, "angry" abusive and insulting ideologue morons's lies have cost millions of human lives. It's time that CND liars were confronted with the undeniable truth.



**Above:** listening, compromising and expressing empathy is all well and good for the trivial conflict resolution of storms in teacups (*Everybody Loves Raymond* comedy episode *Father Knows Least*, starting clip at 1103 seconds), showing a Blair-like peacemaker faced with an easy and a difficult conflict, leading inevitably to predictably different results). *Talking fails, however, for the real challenges where actions speak louder than words.* **The enemy of preparedness against nuclear disaster is intolerant idealism which tries to use simplistic, appealing techniques to peacefully resolve great, deep chasms, before warfare has reduced aggression levels and made reconciliation credible and achievable.** As long ago as 1929, Churchill warned: "No folly is more costly than the folly of intolerant idealism." As Weart explained in his 1998 book *Never at War*, the road to peace is the transformation of dictatorships and communist regimes into financially stable democracies (not intolerant idealist or socialist basket cases like today's bankrupt Spain and Greece), see the quotation from Weart which is linked here.

The problem with Tony Blair's sweeping argument (quoted above) is that he assumes that the leadership is in a position to negotiate, and is willing to negotiate. What happens in most dictatorships is that as soon as the dictator at the top "goes soft", there's a revolution and he's replaced by a hard-liner who can "maintain order and discipline". In the worst cases, like Hitler's and Stalin's national socialism, the massive state spending sprees created a debt crisis that in part motivated the aggressive impulses of evil empires, a fact ignored by democracies who listened instead to people like Nobel Peace Prize winner Sir Norman Angell, whose book *The Great Illusion* claimed that the financial costs of war made war a great illusion, a prize-winning argument which totally ignored "peaceful genocide," concentration camp eugenics, slavery, and the non-quantifiable value of individual freedom from state control. In other words, Angell's theorem was the opposite to reality: financial debt problems motivated Hitler's aggression, rather than fear of war debt showing war to be a great illusion. Similarly, Prime Minister Chamberlain used fears of the financial cost of a preventative war to stop German rearmament as an excuse for appeasement and for not investing enough in an arms race and in civil defence to counter the effects of enemy action (like all



politicians, he was after a Nobel Peace Prize and eternal glory). Thus, fears of debt motivated the very policies that led to war, instead of preventing the war.

Northern Ireland's peace agreement in 1998 was a special case because the majority of the people (ignoring a few extremists) on both sides by then (after decades of violence) felt that violence wasn't getting anywhere, *because violence had run its course and **BOTH SIDES** (not just one side) were prepared to negotiate meaningfully and reach an agreement involving compromise.*

Could the peace agreement have been reached earlier, without generations of violence leading to weariness of violence? No more than Japan's early surrender could have been *secured* without Hiroshima and Nagasaki, or the disintegration of the USSR without its bankruptcy in the arms race. In all these cases, peace talks and arms agreements were desperately attempted, yet went nowhere until the stakes were raised high by violence, war (or cold war) weariness, or the threat of violence. *Action had to speak louder than words **before*** before a negotiated change to a more peaceful direction.

As Herman Kahn points out in his 1960 classic *On Thermonuclear War*, the problem is not even a *direct* "threat" of war or a *direct threat* of "violence". Germany never *directly* threatened to attack Britain or to "start" a war with Britain, either in 1914 (when Britain's Foreign Secretary Edward Grey minced his language and procrastinated from decisive warnings so badly that the Kaiser believe that Britain wouldn't declare war if Germany *invaded Belgium*) or in 1939 (when Chamberlain similarly misled Hitler by repeatedly backing away from confrontation as Germany rearmed and broke treaty after treaty, invading successive countries, until war was finally precipitated not by a direct threat to Britain but by Germany's invasion of Poland, with which Britain had made a military support agreement in a plan that was supposed to be "war preventing" but of course did the opposite, like all such idealistic agreements).

Like Grey's appeasement of the Kaiser in 1914, Hitler in 1939 was repeatedly told by Chamberlain that Britain had no stomach for war, and was obsessed with peace. In a sense, appeasement action conned the Nazis into believing they would be allowed to do what they like. Thus, as Kahn points out, we need not to merely deter or counter direct threats, but we need to be ready for the kinds of indirect threats that we have seen in history. The world has not "moved on" from the basic key problems of the 1930s.

Violence, the threat of violence or a weariness of war or cold war, is always needed to bring about a sincere desire for peace; "exceptions" to this rule are always the **trivial** "conflict cases" where there is no serious conflict of interests to begin with and the "conflict" is just a contrived effort to get talks started (sure, conflict resolution talk and agreement can resolve low-level or exhausted crises which are – or have degenerated into – "storms in teacups"). The fashionable pacifist dogma asserts the opposite, claiming that peace-talk is an alternative to fighting or a replacement for fighting, using the "open the door" sales technique. First, they take an example of a low-level conflict or one which is

contrived in an effort to force negotiation, and is easily resolved; then this "example" is false extended into the general case of all arguments, including those like the 1930s where all attempts at conflict resolution made things worse by allowing the enemy to rearm faster than democracies and to extend its lead (the gap in the arms race which led to a full scale world war, with tens of millions dead). Human nature is such that peace-talk by Grey in 1914 and Baldwin and Chamberlain in the 1930s encouraged aggressors, by inviting coercion and by displaying fear and weakness to terrorists.

**There is a difference between "reconciliation" and "appeasement", and the difference is this: reconciliation is what happens *after* a violent fight, whereas appeasement is what happens *before* one.**



British Prime Minister Neville Chamberlain in Munich - 1938

Hugo Jaeger / LIFE  
LIFE, p. 144

Proposed to receive the Nobel Peace Prize for his work  
(but events would soon prove his work to have been hollow)

We, the German Führer and Chancellor and the British Prime Minister, have had a further meeting today and are agreed in recognising that the question of Anglo-German relations is of the first importance for the two countries and for Europe.

We regard the agreement signed last night and the Anglo-German Naval Agreement as symbolic of the desire of our two peoples never to go to war with one another again.

We are resolved that the method of consultation shall be the method adopted to deal with any other questions that may concern our two countries, and we are determined to continue our efforts to remove possible sources of difference and thus to contribute to assure the peace of Europe.

Neville Chamberlain

September 30, 1938.





# Peace Pledged by Hitler and Chamberlain

LONDON, Sept. 30. (U.P.)—

Prime Minister Chamberlain tonight delivered to his people the Munich agreement for dismemberment of Czechoslovakia and his sealed and solemn pledge with Adolf Hitler that Great Britain and Germany "never will go to war with one another again."

The Anglo-German pact of peace, described by Chamberlain as the prelude to a lasting settlement "in which all of Europe may find peace," came like a bombshell.

## CROWDS HYSTERICAL

It heightened the hysteria of crowds rejoicing in the streets over the eleventh-hour success of Europe's four major powers—Britain, France, Germany and Italy—in averting war because of the German-Czech crisis.

Scenes in the streets were reminiscent of the November night in 1918 when word came of the Armistice. Chamberlain was hailed as a "liberator."

The capitulation of the Czechs to the Munich agreement earlier today paved the way for the dictators and the democracies to set out on a far-reaching effort to wipe out Europe's trouble spots and eliminate the periodic menaces of war.

## ONLY PRELUDE

"I want to say that settlement of the Czechoslovak problem now achieved is, in my view, only the prelude to a larger settlement in which all of Europe may find peace," Chamberlain told a huge crowd on hand to greet him when he stepped from his special plane at Heston airdrome late today.

We, the German Führer and Chancellor and the British Prime Minister, have had a further meeting today and are agreed in recognising that the question of Anglo-German relations is of the first importance for the two countries and for Europe.

We regard the agreement signed last night and the Anglo-German Naval Agreement as symbolic of the desire of our two peoples never to go to war with one another again.

We are resolved that the method of consultation shall be the method adopted to deal with any other questions that may concern our two countries, and we are determined to continue our efforts to remove possible sources of difference and thus to contribute to assure the peace of Europe.

*Neville Chamberlain*

September 30, 1939.



Germany violated the Versailles Treaty, and Germany, Italy, and Japan defied the League of Nations by the following acts of aggression: Italy conquered (1) Ethiopia, 1935; and occupied (2) Albania, 1939. Germany seized (3) the Rhineland, 1936; (4) Austria, 1938; (5) the Sudetenland, 1938; (6) the rest of Czechoslovakia, 1939; (7) Memel and Danzig, 1939; and (8) Poland, 1939. Japan invaded (9) Manchukuo, 1931; (10) the Eastern Provinces, 1939; and (11) Hainan and Chinese Ports, 1939.



**Above:** at 11.15 a.m. on 3 September 1939, Britain's Prime Minister Neville Chamberlain broadcast the admission: "This morning the British Ambassador in Berlin handed the German Government a final Note stating that, unless we heard from them by 11 o'clock that they were prepared at once to withdraw their troops from Poland, a state of war would

exist between us. I have to tell you now that no such undertaking has been received, and that consequently this country is at war with Germany. You can imagine what a bitter blow it is to me that all my long struggle to win peace has failed. Yet I cannot believe that there is anything more or anything different that I could have done [for the Nazis, he means; there was a hell of a lot more he could have done to effectively deter horrors for the Jews, for civil defence shelter research funding, and for a real arms race that would exceed Nazi spending and deter Nazi invasions until Germany went bankrupt, like Churchill called for in the early 30s, and Reagan did in the 80s with the USSR] that would have been more successful [where "success" is judged by the criterion of achieving a Nobel Peace Prize, not success as judged by more objective criteria, e.g. stopping what is today called "ethnic cleansing" by appeasers of terrorism]. Up to the very last it would have been quite possible to have arranged a peaceful and honourable settlement between Germany and Poland, but Hitler would not have it. He had evidently made up his mind to attack Poland whatever happened, and although He now says he put forward reasonable proposals which were rejected by the Poles, this is not a true statement. The proposals were never shown to the Poles, nor to us, and, although they were announced in a German broadcast on Thursday night, Hitler did not wait to hear comments



on them, but ordered his troops to cross the Polish frontier. **His action shows convincingly that there is no chance of expecting that this man will ever give up his practice of using force to gain his will. He can only be stopped by force.**”

The threat of force is why we need war capabilities that go beyond mindless yammering, and why we need civil defense to take the edge off terrorist intimidation and coercive indirect or direct threats. Chemical disarmament pledges and treaties like the 1925 Geneva Protocol did not prevent millions of defenseless people being gassed to death at concentration camps in WWII. Bits of paper and unarmed policemen do not deter thugs today, didn't deter thugs in the past, and certainly won't deter thugs in the future.

Update (30 October 2013):

Over a month before the Damascus sarin nerve gas attack that killed 1,300 civilians, Foreign Secretary William Hague on 16 July 2013, British Foreign Secretary issued a written statement to Parliament which stated: “There is evidence of attacks using chemical weapons in Syria – including sarin. We believe that the use of chemical weapons is sanctioned and ordered by the Assad regime. ... We plan to equip the moderate armed opposition with 5000 escape hoods, nerve-agent pre-treatment tablets (NAPs) and chemical weapons detector paper.” What he could have done was to have prepared civilian kids using civil defence. Sarin is liquid droplets which at typical ambient temperatures take 3 times longer to evaporate than water droplets of similar size. Britain's Porton Down in the 1970s proved how to keep sarin droplets and their vapour out of houses with blast-broken windows, using a simple, DIRT-CHEAP, duct-tape-and-plastic-sheeting method which was proof-tested against simulated nerve and blister gas liquid contaminants! The actual method is very simple and was first tested and employed in 1917 by America in gas-proofed trenches. (Page 14 of the Confidential-classified American manual of 1917, “Defensive Measures Against Gas Attacks”, states: “The value of gas-proof dugouts and cellars has been clearly demonstrated. This should be borne in mind in view of the inflammation of the skin produced by mustard gas.”) In 1937, the government published a 7-page printed report on experiments to determine the effectiveness of anti-gas protection of houses and of people wearing gas masks or not wearing gas masks in sealed rooms. (I've put it on the Internet Archive

at:<http://archive.org/stream/AirRaidsWhatYouMustKnowWhatYouMustDo/AirRaidsHandbook#page/n141/mode/2up> together with some of the updated research proving that nerve liquids can be kept out the same way, while it evaporates, plus declassified effective civil defence evidence for other weapons than can be used in war.) This Experiments in Anti-Gas Protection of Houses ARP report was published by the Home Office Air Raid Precautions (ARP) Department to disprove fears circulated by various critics in 1937 (especially the Cambridge Scientists' Anti-War Group which published a book claiming to entirely discredit all air raid precautions), that the gas masks and gas proof rooms did not work, were unreliable, or were just armchair advice invented to support anti-Nazi warmongering rather than appeasement policies:

“The experiments were conducted by the Chemical Defence Research Department under the aegis of a Special Sub-Committee of the Chemical Defence Committee. That Sub-Committee was composed of

eminent experts not in Government employment, and included a number of distinguished University professors and scientists.”

This report first summarises the protective anti-gas advice published in ARP Handbook 1 in 1937, and then gives the results of experimental tests at Porton Down, using a draughty game-keeper’s cottage with windows shut:

“... over a ton of chlorine gas was released 20 yards from the house so that the wind carried it straight on to the unprotected room. ... Human beings who occupied this unprotected room found that gas penetrated slowly into the room, and after about seven minutes it became necessary for them to put on their respirators. ... In another experiment the house was surrounded at a distance of 20 yards by large shallow trays which were filled with mustard gas ... Animals were placed in an unprotected room ... Observations made upon the animals ... showed that none of them were seriously harmed by the mustard gas. The third type of gas used was tear gas ... after 3/4 of an hour the strength of the gas inside the house was still very much less than that outside.”

The report then goes over the same experiments done on a protected room with door and window frames sealed up and shows:

“The animals in the ‘gas protected’ room, however, were unaffected and remained normal, notwithstanding the severity of the trial.”

In no case could toxic concentrations of a gas penetrate into a sealed up room before the gas outside had been blown away or evaporated by the weather.

“The entire Free World, despite its intellectual sophistication, is being held hostage by fear. This fear of the unknown has proliferated for the past 80 years through propaganda, unsound pronouncements of world leaders, and misleading labels compounded by a public press that has neglected its own mandate to seek out and tell the truth.”

– James W. Hammond, *Poison gas: the myths versus reality*, Preface (Greenwood Press, 1999).

Trust the (un)United Nations to push ahead with “banning” the most easily produced and cheaply protected against weapons, while ignoring and permitting the harder-to-protect-against weapons like snipers bullets (requiring helmets and flak jackets at least) or high explosives (involving shelter from blast and fragments). As the Japanese Aum Shinrikyo cult which used sarin in 1995 proved beyond any doubt or denial, Chemical disarmament pledges and treaties like the 1925 Geneva Protocol did not prevent millions of defenseless people being gassed to death at concentration camps in WWII. Bits of paper and unarmed policemen do not deter thugs today, didn’t deter thugs in the past, and certainly won’t deter thugs in the future.



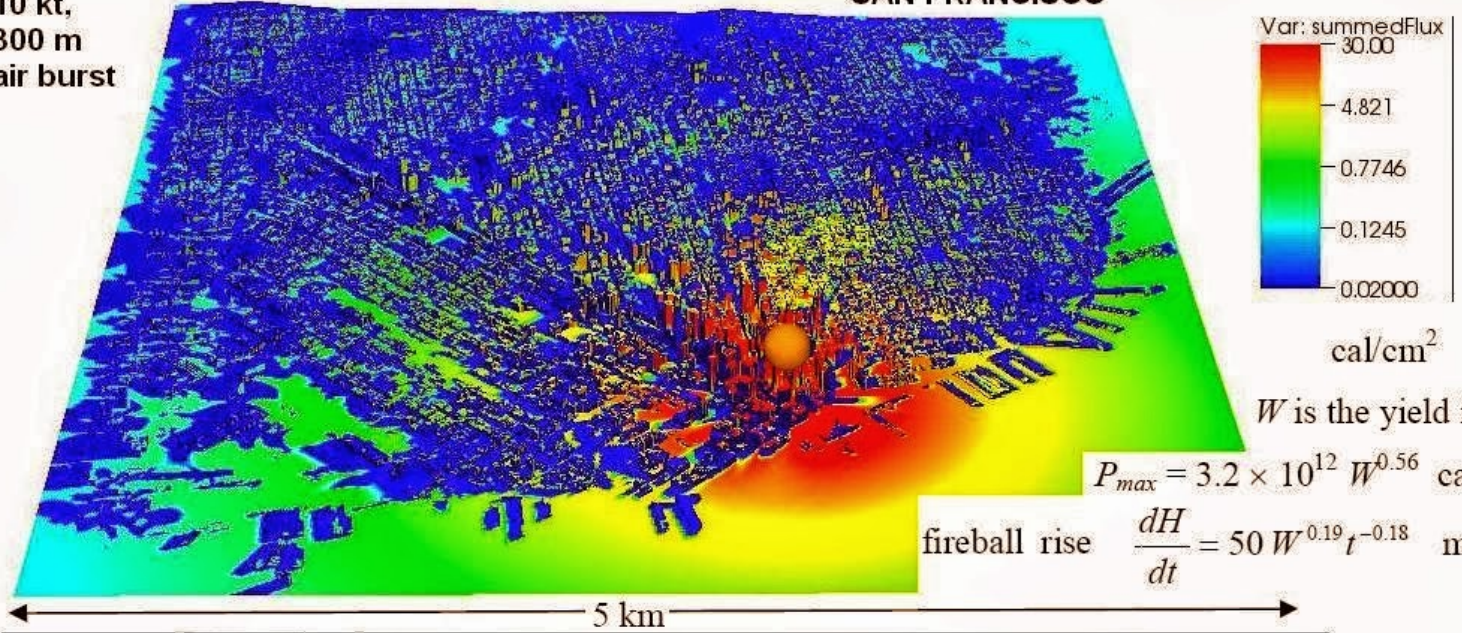
# Thermal Radiation from Nuclear Detonations in Urban Environments

R. E. Marrs, W. C. Moss, and B. Whitlock  
Lawrence Livermore National Laboratory

UCRL-TR-231593  
June 7, 2007

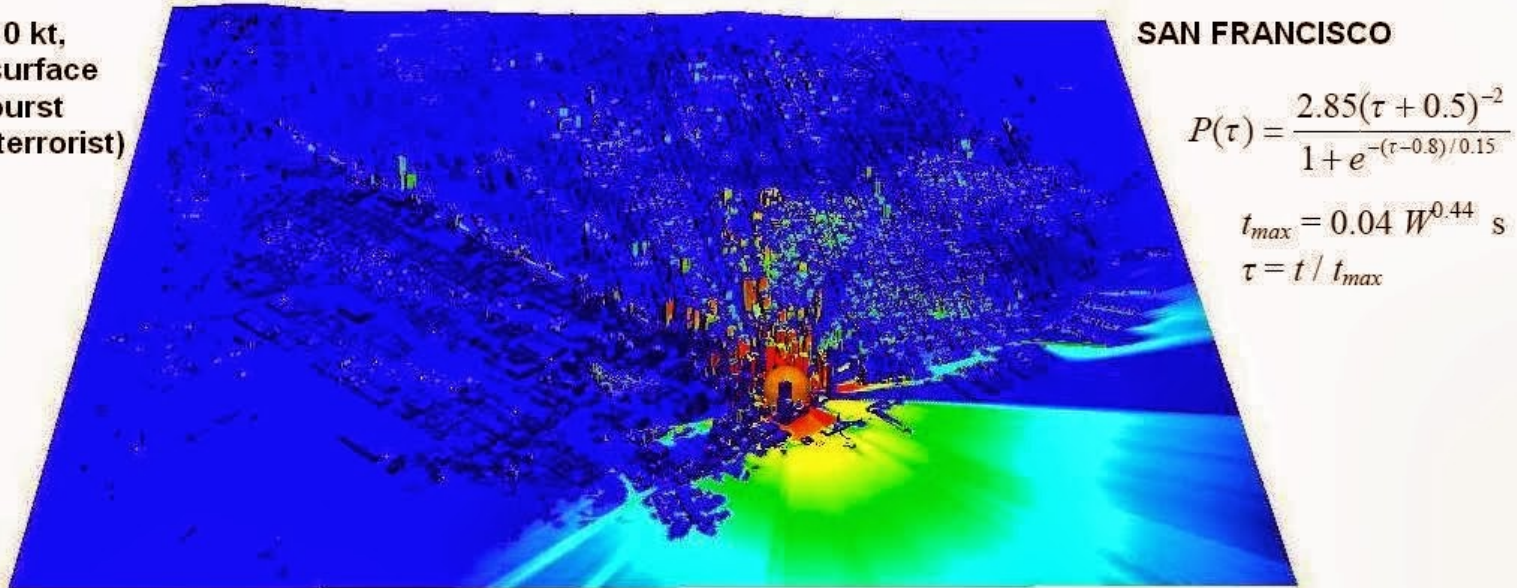
10 kt,  
300 m  
air burst

SAN FRANCISCO



10 kt,  
surface  
burst  
(terrorist)

SAN FRANCISCO



Even without shadowing, the location of most of the urban population within buildings causes a substantial reduction in casualties compared to the unshielded estimates. Other investigators have estimated that the reduction in burn injuries may be greater than 90% due to shadowing and the indoor location of most of the population [6].

We have shown that common estimates of weapon effects that calculate a “radius” for thermal radiation are clearly misleading for surface bursts in urban environments. In many cases only a few unshadowed vertical surfaces, a small fraction of the area within a thermal damage radius, receive the expected heat flux.

APPROXIMATE: The blast, heat and radiation are easily shielded by modern concrete jungles, and thus all the effects are highly survivable with simple proof-tested “duck and cover”, contrary to terrorism-



supporting propaganda.



*Specialty drawn for H.M. Government by Illingworth*

*The basic minimum of information for every responsible man and woman*



- 1** The H-Bomb: we hear too much of the horrors, not enough about our chances of survival. Some people will tell you that if this country were attacked with H-Bombs, every man jack of the population would be wiped out. *That just isn't true: it isn't anything LIKE the truth.*
- 2** Civil Defence is well on with the job already.

Do you know how to put out a fire? Do you know how to operate a radio transmitter? These are two more of the useful, interesting things that Civil Defence could teach you, now.

Do you remember the East Coast floods, the Lynmouth disaster, the Harrow rail smash? These are three of the emergencies where trained volunteers from Civil Defence were ready and able to help. They were needed.

# **CIVIL DEFENCE is common sense**

ISSUED FOR H.M. GOVERNMENT BY THE CENTRAL OFFICE OF INFORMATION

Civil Defence  
National From Sept. 1957  
C.B.P. 1537 32 x 151  
Final Proof 7-27-57 L10605

## **6 November 2013: The "population bomb" eugenics liars supported by the compulsory licence funded BBC**

While we're rooting out eugenicists, like Stalin's corrupt communists who murdered 40 million in collectivization in the 1930s (far more than Hitler's 6 million which is more widely hyped by the left than Stalin's "success"), and the evil Medical Nobel Laureate and gas chamber eugenics fascist Dr Alexis Carrell, let's look at an article written recently by Fredrick Forsyth about propaganda from a BBC ideologue and why it's totally false:

**"IT IS CORRUPTION, NOT OVER-POPULATION, THAT IS STARVING THE WORLD'S POOR**

"Sir David Attenborough tells us that mankind's real problem is over-population, leading to starvation



... nonsense. ... the people of Singapore ... Taiwan, Hong Kong and South Korea ... Japanese ... all are among the wealthiest and best fed in the world. The starving are not those who lack land ... If Sir David's equation was right, we British would eat less well than the folk of Mali because their land is bigger. [Across much of East Africa and other impoverished "overpopulated" starving and disease ridden areas] beneath even arid land there are aquifers ... Yet the people ... are desperately poor and thus hungry and, from drinking filthy water, diseased. ... In just about every impoverished country on earth there is one scourge worse than malaria, dysentery, or even hunger: corruption. ... The wells are never dug ... There is no end to the appetite of the corrupt." – Frederick Forsyth, Daily Express, Friday 27 September 2013, page 15.

As we show in Figure 12 of our review of Delingpole's book *Watermelons* (the relevant page of our review is linked here), Sir David Attenborough is ignorant, arrogant, and plain wrong in repeating the Malthus lie: under capitalism a growing world population *increases the food supply per person, because food production increases faster than population due to factors called "science" and "technology" which Malthus didn't have a clue about.* What's Attenborough's excuse? Ignorance? Stupidity? Propaganda? Saving the world by killing it? The ends justify the means? Whatever, it's just the pathetic lies used to defend pseudosciences, from epicycles to eugenics to shooting people climbing the Berlin Wall. What's interesting in addition is that the very corruption that diverts charity from wiping out starvation and disease in the world is mirrored in the West by compulsory funded (USSR media type) BBC and (loss making) Guardian newspaper propaganda lies in the name of "peace". According to Jesus, it's best to remove the plank from your own eye before attending to the splinter in somebody else's. So maybe it is wisest that we root out, expose, and discredit popular corrupt propaganda liars in the West, before we can hold the moral high ground to wipe out corruption elsewhere. (Marxism and eugenics propaganda are products of Western culture. No surprise, really.)

From the BBC's Useful Idiots

program: [http://www.bbc.co.uk/worldservice/documentaries/2010/07/100624\\_doc\\_useful\\_idiots\\_lenin](http://www.bbc.co.uk/worldservice/documentaries/2010/07/100624_doc_useful_idiots_lenin)

"In 1952 Doris Lessing, a British writer who has since won the Nobel Prize for Literature, was part of a delegation visiting the Soviet Union. Her memories of the trip are clear and unforgiving: "I was taken around and shown things as a 'useful idiot'... that's what my role was." ... Irish playwright George Bernard Shaw and American journalist Walter Duranty were some of those people who also visited the Soviet Union. However as stories mounted of mass murder and starvation in parts of Russia and the Ukraine, reporters such as Gareth Jones and Malcolm Muggeridge investigated and reported on 'the creation of one enormous Belsen'. Duranty responded with an article in the New York Times headed 'Story of the famine is bunk', and got an exclusive interview with Stalin. Soon after, Jones died and Muggeridge's career nose-dived. Duranty was awarded a Pulitzer."

The point is, as with Duranty, when there are two sides to any story, the BBC and Guardian newspaper unflinchingly manage to swallow the liars propaganda (hook, line and sinker), thus taking the wrong side. The simple answer is that these pseudo-intellectuals find fiction more appealing than facts. They prefer utopian hopeful fantasies to tough reality. They are ideologues who want to believe in contrived propaganda that reinforces their ideals.

U... E (10 Nov. 2013):

Professor Hans Rosling has an article in the 6 Nov. 2013 *Spectator*, stating:

# Don't panic! There's no population bomb

Hans Rosling 6 November 2013 17:32

Our planet is now home to seven billion people, with ravenous appetites for fuel and food — and the number keeps growing. ... Yet paradoxically, the number of children in the world is not going to rise from now on. Let me first bust a few myths. How many babies do Bangladeshi women have on average ... by now it's actually 2.2 ... This is what Brits don't know: that in Bangladesh — and also in Brazil, Vietnam, India and big African cities like Addis Ababa — two-child families are the norm. ... It's unprecedented in human history. It also means that we'll see the end of fast population growth by the end of this century. ... Here's the thing. Around 2000 we reached the period of 'peak child' — from then on, the number of people under the age of 15 stayed at about two billion of the global population ...

The population growth since 1800 was due to a much longed-for drop in child mortality. A wonderful thing occurred, which is that medical advances meant fewer people died in childhood, while humans in general could expect to live longer. In 1972, the year of Bangladesh's independence, there was on average seven babies per woman, and the lifespan was less than 50 years. Today, the average Bangladeshi family has 2.2 children, while life expectancy is 70. ...

This pattern is occurring everywhere — especially in countries like China and India, which people normally think of as contributing most to the population 'explosion'. Fifty years ago, the global average number of babies born per woman was five; today it's 2.5 and decreasing. People think that countries like Bangladesh are the epicentre of a population bomb but they couldn't be more wrong. ... By 2050, Asia will have one billion more people — then its population growth is over. During this time, Africa's population will double to two billion, and is set to double again to four billion by 2100. By the end of the century, with no more population growth in Europe, the Americas and Asia, there will be 11 billion people on earth, with four billion of that in Africa. ...

Here's another question we posed to British people: what's the literacy rate of the world — 20, 40, 60 or 80 percent? Half chose 20 and 40 percent, nearly 45 percent of them chose 60 percent, and only 8 percent picked 80 percent. The answer, of course, is 80 percent (and rising). Four-fifths of the world can read and write, and thus hold the means to pull themselves out of poverty. You see? Our perception of things is very different from the reality.





I am not an optimist, but I do call myself a possibilist. And I say the world is much better than many think.



Prof. Hans Rosling's graph of population: *the number of kids (under 15 years old) on this planet peaked at 2 billion in 2000 and has not risen since then, because the population growth was just due to medical advances that increased childhood survival and lifespan. The continued increase in total population is due to a temporary lack of sync between births and deaths, due to increasing lifespan. By about 2100 (provided that nobody produces a cheap effective cure for cancer, heart disease, etc.) the total population will stabilize at 11 billion (less than twice today's 7 billion). Most of the increase will be Africa, where technology has time (87 years) to politically reintroduce DDT to kill off the malarial mosquitoes and make capitalist civilization succeed and provide a high standard of living. (The eco-eugenicists would prefer to wipe out the "excess humans" by reintroducing lions or other pests, therefore they tend to either "slow handclap" or scream to drown out the voice of anybody who tells the unfashionable truth.)*

**13 November 2013 update: the Cold War, Communist marine sharp shooter Lee Oswald, and conspiracy-based denials of a simple explanation to the Kennedy assassination**



# PRESIDENT KENNEDY ASSASSINATED

President Kennedy was assassinated yesterday in Dallas, Texas. Three shots were fired as the President's open car passed near an intersection in the main business area of the city. He was hit in the head and died in hospital soon afterwards. Mrs. Kennedy was unhurt, but Mr. John Connally, the Governor of Texas, who was riding with the President, was hit and gravely wounded.

## RIFLE NEAR WINDOW

From Our Own Correspondent  
WASHINGTON, Nov. 22

The assassination took place as the presidential party drove from the airport into the city of Dallas. One witness said the shots were fired from the window of a building. People flung themselves to the ground as armed policemen and Secret Service agents rushed into the building. A rifle with telescopic sights was found there.

The President was wounded in the head and collapsed into the arms of his wife. She was heard to cry, "Oh, no" as she cradled his head in her lap and the car, spattered with blood, speeded to Parkland Hospital.

The President was still alive when he reached the hospital. He was taken into an emergency room where facilities were said to be adequate.



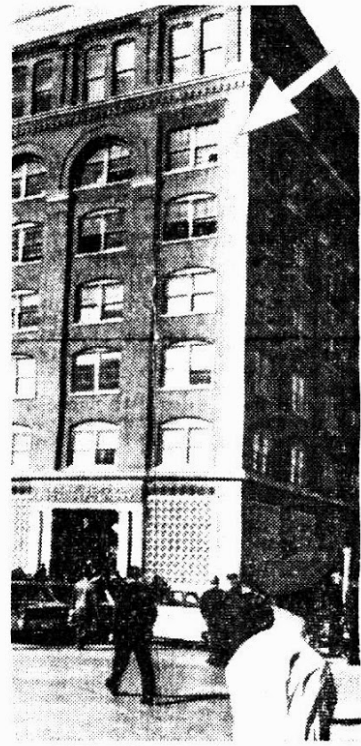
A policeman with rifle believed to be the assassination weapon.

## WITNESS'S STORY

DALLAS, Nov. 22.—Mr. Bob Jackson, a photographer for the *Dallas Times Herald*, saw the shooting and even saw the rifle used from the window. He was riding in the convoy close behind the President's car with four other people.

"When we heard the first shot," he said, "the President had already turned the corner. We had not made the corner yet. Then we heard two more shots. As far as I know, three shots were all I heard."

"Since I was facing the building where the shots were coming from, I just glanced up and saw two coloured men in a window straining to look at a window up above them. As I looked up to the window above, I saw a rifle being pulled back in the window. It might have been resting on the windowsill. I didn't see a man. I didn't even see if it had a scope [telescopic sight] on it."



An arrow points to the window in the building in Dallas from which it is believed the assassin's shot was fired.

ABOVE: on 22 November 2013, there will be another round of conspiracy theories, since it will be 50 years after the Kennedy assassination by ex-marine, the Communist Lee Oswald, who ran a "Hands off Cuba" protest campaign against Kennedy after returning from a trip to Russia. Instead of focusing on these actual facts, conspiracy theorists "set aside" the Oswald facts in the same way that Marxist teachers "set aside" the USSR evil empire evidence. The latest 2013 conspiracy theory is that Oswald fired only two shots and the third spent bullet casing (found by his gun) is claimed to be just an casing kept loaded in the gun to keep dust out from the breech. This new conspiracy theory by Australian police detective Colin McLaren asserts that a Secret Service agent (George Hickey, who



died in 2005) accidentally shot Kennedy using a AR-15 from the car behind the President's, as his car accelerated after the first two shots. (Hickey in 1995 had sued a previous conspiracy theorist, author Bonar Menninger.) What is the probability that a bullet fired by accident by Hickey happens to hit Kennedy's head? Even if it is true, Communist Oswald doesn't disappear. (He shoots at Kennedy twice, triggering a fatal accident.)

The film and injuries show the directions of bullets that proved important (if bullets were fired by others, they missed). Newton's 3rd law of motion predicts correctly the so-called "unexplained" backward motion of a head hit with a bullet: the shock wave pressure of a bullet in cerebral fluid material causes material to be ejected from the large exit hole (front of head), thus the head recoils backwards, in the opposite direction to this material (as predicted by Newton's 3rd law of motion: action and reaction are equal and opposite). There is no mystery unless you ignore this key, well proved law of physics!

Just as with witchcraft, 10/11 dimensional superstring/supergravity, CO2 induced runaway climate change, gas bombs, nuclear radiation effects, and the effects of nuclear weapons, the popular media "sets aside" the laws of physics, empirical evidence and mechanisms involved; which clears the canvas of reality so that they can have a field day inventing nonsense/conspiracy theories, and blaming anyone but the fact-proved culprit (a crazy, dangerous, deluded Communist). Irrational, fact-denying groupthink is "defended" by censorship, as Irving L. Janis pointed out on page 206 of his 1972 book *Victims of Groupthink*, censorship of facts is vital for irrational cults. This censorship, Janis explained on page 198, is performed by: "members who protect the group from adverse information ..."

Al Gore's film *An Inconvenient Truth* is an example: in testimony to congress, Gore simply avoided all evidence against his dogma by making the claim that any evidence against runaway CO2 induced climate change is analogous to "conspiracy theories about the moon landings". Yet the moon landings "critics" don't know any physics: that rocket engines don't produce sound waves in the vacuum on the moon, that without air drag to damp the oscillations of a flag, a flag will continue to oscillate for a long period, that diamond scratched cross hairs on photographic lenses are not black or white paint but instead always appear over the image, that radio transmissions from the moon were by directional S-band microwaves (to penetrate Earth's ionosphere) that were received by directional dishes around the Earth as the planet rotated. It would have been more expensive to "fake" moon landing, than to have the real thing.

The reason why such conspiracy theories continue is the use of authoritative assertion rather than rational justification for the facts. The prejudiced, physics ignorant, popular media forms a propaganda lobby, analogous to the moon deniers. Media censorship of physics prevents the facts being discussed:

President John F. Kennedy

Delivered in person before a joint session of Congress

May 25, 1961:

**"One major element of the national security program which this nation has never squarely faced up to is civil defense. ... Public considerations have been largely characterized by**

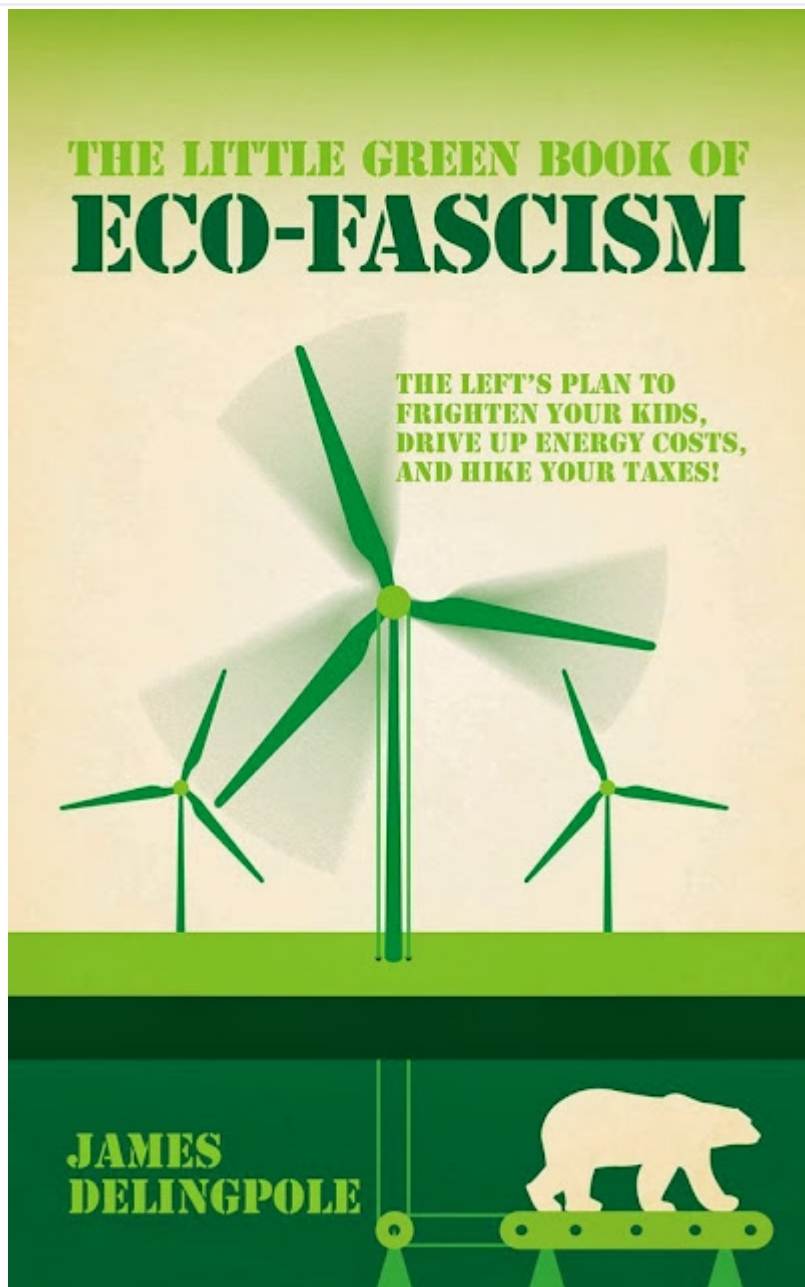
**apathy, indifference and skepticism ... this deterrent concept assumes rational calculations by rational men. And the history of this planet, and particularly the history of the 20th century, is sufficient to remind us of the possibilities of an irrational attack, a miscalculation, an accidental war, which cannot be either foreseen or deterred. It is on this basis that civil defense can be readily justifiable – as insurance for the civilian population in case of an enemy miscalculation. It is insurance we trust will never be needed – but insurance which we could never forgive ourselves for foregoing in the event of catastrophe. ... no insurance is cost-free; and every American citizen and his community must decide for themselves whether this form of survival insurance justifies the expenditure of effort, time and money. For myself, I am convinced that it does.”**

(Note that this pro-civil defense quotation from Kennedy’s moon landing speech has been reversed by many deliberate “pacifist” misquotations, omitting Kennedy’s warning against civil defense apathy and irrational attacks by enemies, and trying to imply falsely that Kennedy’s words “an irrational





attack, a miscalculation, an accidental war, which cannot be either foreseen or deterred” was aimed at the nuclear weapons in the hands of democracy.)



Delingpole's new book on Ecofacism will be published in December 2013. "Godwin's law" states that we must avoid any analogy of the 1920s Brownshirts to modern fascists, until after a full holocaust in the name of eugenics pseudoscience.

**Plausible-sounding consensus lying triumphs over scientific objectivity and facts because it tells people what they want to hear, which is not the truth!**

The only reason why significant CO2 related temperature rises are predicted by all 21 IPCC climate models is that they all contain the same error: assuming that water vapour absorbs sunlight to amplify the CO2 injection by positive feedback, ignoring the fact that it would gain buoyancy, rise and condense into cloud cover. See the corrected IPCC results in Figures 2 and 3 in my paper: *Failure of All 21 Ipcp Positive-Feedback Climate Models*,

<http://vixra.org/pdf/1302.0044v2.pdf>. (There is no significant effect from CO2, in agreement with air observations over the past 15 years.)

Elizabeth Nickson states on page xiv of her 2012 book *Eco-fascists* (published by HarperCollins):

"My father landed on D-day and, at the end of the war, was put in charge of a Nazi camp and told to 'sort these people out.' ... That darkness and history taught me that man defaults to tyranny over and over again, and while the tyranny of the environmental movement in rural America has not reached what its own policy documents say is its ultimate goal – radical population reduction – we cannot any longer ignore that goal and its implications."

On page 1, she summarised the problem in the ancient Roman proverb:

"Mundus vult decipi, ergo decipiatur." (*The people wish to be deceived, so let them be deceived.*)

Janet Biehl and Peter Staudenmaier, *Eco-fascism Revisited: Lessons from the German Experience*, New Compass Press, second edition, 2011, pages 10-12:

"In fact, ecological ideas have a history of being distorted ... Nazi 'ecological' ideology was used to justify the destruction of European Jewry. ... these reactionary and outright fascist ecologists emphasize the supremacy of the 'Earth' over people; evoke 'feelings' and intuition at the expense of reason; and uphold a crude sociobiological and even Malthusian biologism. ... More than ever, an ecological commitment requires people today to avoid repeating the errors of the past, lest the ecology movement become absorbed in the mystical and antihumanistic trends that abound today."

Sir Basil Henry Liddell Hart, *Why Don't We Learn from History?*, PEN Books, 1944; revised edition, Allen and Unwin, 1972:

"If a man reads or hears a criticism of anything in which he has an interest, watch whether his first question is as to its fairness and truth. If he reacts to any such criticism with strong emotion; if he bases his complaint on the ground that it is not in 'good taste,' or that it will have a bad effect – in short, if he shows concern with any question except 'is it true?' he thereby reveals that his own attitude is unscientific. Likewise if in his turn he judges an idea not on its merits but with reference to the author of it; if he criticizes it as 'heresy'; if he argues that authority must be right because it is authority; if he takes a particular criticism as a general depreciation; if he confuses opinion with facts; if he claims that any expression of opinion is 'unquestionable'; if he declares that something will 'never' come about, or it is 'certain' that any view is right. The path of truth is paved with critical doubt, and lighted by the spirit of objective enquiry... We learn from history that in every age and every clime the majority of people have resented what seems in retrospect to have been purely matter of fact ... **We learn too that nothing has aided the persistence of falsehood, and the evil resulting from it, more than the unwillingness of good people to admit the truth ...**



Always the tendency continues to be **shocked** by natural comment, and to **hold certain things too 'sacred' to think about**. I can conceive no finer ideal of a man's life than to face life with clear eyes **instead of stumbling through it like a blind man, an imbecile, or a drunkard – which, in a thinking sense, is the common preference. How rarely does one meet anyone whose first reaction to anything is to ask: 'is it true?'** Yet, unless that is a man's natural reaction, it shows that truth is not uppermost in his mind, and unless it is, true progress is unlikely." (Emphasis added.)

This is precisely the point Herman Kahn made in his 1962 book *Thinking About the Unthinkable* (quoted on 34 of my review of *Watermelons*, linked here). The "protective stupidity" described by Orwell in *1984*, where the majority is "*bored or repelled by any train of thought which is capable of leading in a heretical direction,*" is behind all unresolved outstanding problems. Alternative ideas are simply being killed off before they are objectively investigated, by a dictatorship of *status quo*.

In politics, for example, we have *1 election in 4 years which gives a choice between a couple of relatively fashion-dominated parties*, not really "democracy" (democracy in ancient Greece was a *daily* referendum on *issues* rather than a choice of dictators or fashion dominated parties). This election once in 4 years is at least  $4 \times 365 = 1,460$  times *less* democracy than in ancient Greece (the factor much is larger if you take account of the actual voting for issues, rather than parties). If ancient Greek democracy (a daily referendum) is the benchmark at 100% democracy, modern "democracy" is less than 0.07% of that benchmark ( $1/1,460$ ). Winston Churchill's defence on 11 November 1947 in the House of Commons (having been kicked out of office in 1945 due to an opposition which promised socialist utopia) is that "Democracy is the worst form of government, except for all those other forms that have been tried from time to time." However, this conflates modern "democracy" (only 0.07% of ancient Greek democracy) with daily referendums, which was genuine democracy. The fact is, 0.07% democracy is closer to 0% democracy, than it is to 100% democracy. It is indeed better to have 0.07% than to have 0% as in a total dictatorship, yet there is a lot of room for improvement. Traditional excuses like technical problems with daily referendums are null with secure internet database technology. If everyone can log in securely to a bank account online, they can do the same to vote.

If democracy is banned from objective discussion, or taboo, then you can see why the effects of nuclear weapons, or the progress in quantum gravity or negative-feedback by water vapour on climate change, are taboo too. The first job of lying revolutionaries is to make their dictatorial power secure, and they do this by the use of censorship to prevent the completely objective discussion of errors, omissions, failures, and particularly alternative (rival) possibilities and solutions:

**20 November 2013 update: nutcases in the British Government restrict unclassified fallout data**

This blog post (above) includes a summary (including key photographic evidence) of the key points of a National Archives document ES 5/262, Operation BUFFALO: target response tests; Biology Group;

Part 5; entry of fission products into food chains, 1959, which is now labelled:

## “This record is closed and retained by Ministry of Defence

Retained by Department under Section 3.4

Former references:

**in its original department:** T57/58

Legal status:

Public Record

Closure status:

Closed Or Retained Document, Open Description

Access conditions:

Retained by Department under Section 3.4”

This is a good example over the secrecy of civil defence *evidence* which is needed to be made widespread for people to understand why civil defence works. This report ES 5/262 is by Dr John F. Loutit and Dr R. Scott Russell, *Operation Buffalo, Part 5, The entry of fission products into food chains*, Atomic Weapons Research Establishment report AWRE-T57/58, May 1959.

This report gives the scientific basis for the assertion after Operation Buffalo in the unclassified British Government publication “Nuclear Weapons” (1959 and 1974) that there are simple and obvious countermeasures for fallout in food (British fallout uptake research began at the 1952 Operation Hurricane nuclear test, but this detailed nuclear test civil defence data was also kept secret from public study!), e.g. peeling crops, and even the normal threshing of wheat after the British-Australian Buffalo-2 nuclear test left only 10% of the fallout radioactivity on the corn, 90% on the chaff, and strontium-90 intake from food was a problem over 1,000 times smaller than iodine-131, which has a short half life (thus higher specific activity, decays/second) and is easily dealt with by preserving milk (powdering, freezing, turning to cheese/ice cream etc.), by simply blocking iodine-131 uptake with KI tablets (yes, there is are tablets which block the worst risks of cancer from nuclear fallout, contrary to liars), or by simply moving dairy cattle off pasture grass and onto winter feed while most of the iodine-131 quickly decays with its 8 days radioactive half life (with typical weathering, it disappears even faster – typically an effective half life of only 5 days – from pastures since it is physically removed from grass by wind and rain, in addition to radioactive decay; even in experiments in the dry Nevada desert after nuclear tests).

The two Operation Buffalo fallout effects report authors, John Freeman Loutit and Robert Scott Russell, *both went on to debunk the longer term effects of fallout hype; see proof here and here.*

Moreover, their now “closed or retained” report AWRE-T57/58 was reprinted verbatim in technical book form (*Progress in Nuclear Energy. ser. 6. vol. 3, Pergamon Press, 1961*) and was deposited in university libraries worldwide, as well as being cited in the biological effects chapter in the 1962, 1977 and 1977 edition of Glasstone and Dolan’s *Effects of Nuclear Weapons*.

This example of retrospective classification or limitation of vital research by officialdom is typical of the mechanisms by which myths are allowed to perpetuate, totally unchecked by effective credible evidence. Scare-mongering due to keeping facts (evidence credibly debunking war/weapons effects exaggerations) secret, was tried by the British government in the 1920s with gas warfare, where it backfired by allowing exaggerations from liars to be actually rewarded by popular anti-war acclaim, *causing the 1930s appeasement policy that led to WWII*. The situation today is an exact repeat of the 1920s policy! Truth hurts liars, who scream about rudeness when exposed as quacks who make money by selling lies.

### **Update on UK National Archives "retained under section 3.4" nonsense (24 November 2013):**

It's not only the UK Ministry of Defense that adopts a national security-endangering secrecy with respect to making public at the National Archives the facts on nuclear weapons and civil defence! Here's another example:

"Home Office reaction to book on civil defence ('Beneath the City Streets') by Peter Laurie, 1977, report CDA 74 43/28/3" (UK National Archives document HO 322/777) was retained until 1 January 2005 and then released. (Link here.)

However, the version of this report in the Cabinet Office files at the UK National Archives (document CAB 196/25) is being retained by the Cabinet Office under section 3.4 of the 1958 Public Records Act for at least the next 10 years, until at least the year 2023! This decision to retain it was made **just two months ago**, on **18 September 2013**! The details of the CAB 196/25 report limitation are reproduced below:

Reference:

CAB 196/25

Description:

Book on civil defence by Peter Laurie ('Beneath the City Streets')

Date:

1970 Mar 03 – 1970 Oct 26

Held by:

Creating government department or its successor, not available at the The National Archives

Former references:

**in its original department:** M/1/19

Legal status:

Public Record

Closure status:

Closed Or Retained Document, Open Description

Access conditions:

Retained by Department under Section 3.4



Closure criterion:

Retained in departments on security or other specified grounds

Lord chancellor's instrument:

LCI 113 – Series containing retention instruments

LCI signed date:

2013 September 18

Reconsideration due in:

2023

## *Appendix A*

This article appeared originally in the *New Scientist*, 13 July 1978.

### **Can a secret be SECRET if it isn't actually secret?**

286

#### *Beneath the City Streets*

fall-out might delay this essential work. But by 1967 it was mostly done. The Home Office even took a series of whole-page advertisements in national papers to boast of its achievements. Although civil defence is an emotive subject, the reality is banal enough, and it seems to me that some intelligent people at the Home Office calculated that my book was accurate and unsensational enough to allay paranoia among the public at large without being penetrating enough to help the Russians. One must always remember that while security is seen from the outside to veil exciting secrets, from inside government it is often an expensive and demoralizing nuisance (see Margaret Gowing, *Independence and Deterrence*, vol. 2, Macmillan). If my book made it possible to relax some security in this area, then it was perhaps all to the good.

Above: Peter Laurie's "Beneath the city streets" (first edition 1970 published by Allen Lane, revised 1979 edition published by Panther, including as Appendix A his *New Scientist* article of 13 July 1978: "Can a secret be secret if it isn't actually secret?") was based in part with discussions with the Home Office Scientific Advisory Branch nuclear weapons effects experts for civil defence. As a mathematics graduate, Laurie began researching the subject of nuclear weapons and civil defence for a Sunday Times magazine article in 1967 (the editor of the Sunday Times wanted to know whether the BBC film "The War Game" nuclear effects portrayal was all lies – it was, falsely claiming to rely on data from Nevada nuclear tests done in 1954, a year of course no Nevada nuclear tests occurred, and falsely claiming that the firestorm was predicted by Glasstone's 1964 *Effects of Nuclear Weapons*, which of course was quite the opposite – Glasstone repudiated the firestorm even for most American wooden cities, based on Encore nuclear test evidence) before the UK Civil Defence Corps was closed down by Labour in March 1968 (after anti-civil defence propaganda which exaggerated nuclear effects).

The UK Home Office scientists Laurie spoke to (who in 1967 included George Stanbury and Frank Pavry, both veterans of Britain's first nuclear test explosion at Monte Bello in 1952, where they successfully proved the validity of cheap World War II civil defence shelters against nuclear blast, heat and nuclear radiation; Pavry had also surveyed shelters surviving in Hiroshima and Nagasaki in 1945 since he was part of the British Mission to Japan) explained the "shadowing effect" of modern hi-rise city skylines (unlike Hiroshima or the Nevada desert) as the thermal burns and thermal firestorm/nuclear winter prevention mechanism:

272

## *Beneath the City Streets*

1979 edition

**As part of this process, it seems that the effects of nuclear weapons have been considerably exaggerated. An H-bomb has not quite the all-destroying properties that most people assume. I was surprised when I saw the figures; and depending on whether or not he too is surprised, the reader may be willing to believe that the H-bomb has been oversold, and perhaps deliberately oversold, as a weapon of current politics. Given enough H-bombs, it is true, a vast amount of damage can be done, but there are definite constraints on this damage; there are limits to the number that can be killed. This is perhaps not a thought that our rulers care to emphasize.**





It is odd how in this blackmail operation pacifists work directly with the military. For instance, my conclusions in Chapter 8 that it is not impossible that Britain might survive a nuclear war, and that in some ways it might have some beneficial effects, were received with horror by the more liberal, anti-war critics. They take the position that nuclear war is so frightful it is heresy even to suggest that it may not be the end of all things. Mr Sartori wrote in *Nature* (8 January 1971): ‘Fostering such complacency can only make the public more receptive to the idea that initiation of a nuclear war by the West is a rational possibility to be entertained under some circumstances.’

**Hence: lie to the public! What tosh.**

**1930s war effects  
lies caused WWII!**

*The impact of latent nuclear war on democracy* 277

A chapter on the Resistance. ‘All those who participate in the Resistance risk their lives. This is not a game, it is a pitiless war.’

**● Debunking the idea of**



# Can a Secret be SECRET if it isn't actually secret ?

As the Colonel B excitements have shown, there is something drastically wrong with the workings of Britain's Official Secrets Act (OSA) and the conflicting ideas in the minds of government, press and MPs about what is, and ought to be, secret. This article presents an account of an individual experience of the Act's workings—or rather, non-workings—in the hope that it may be useful to others in a like predicament, and may contribute to the reformation of an unsatisfactory law

## Peter Laurie

is a freelance journalist and author of *Beneath the City Streets: Private Enquiry into the Nuclear Preoccupations of Government* (Penguin)

New Scientist 13 July 1978

97

In 1967 Peter Watkins made a film for the BBC called *The War Game* which showed, rather too realistically for many stomachs, just what nuclear war would feel like for the unwilling civilian participant. A famous scene portrayed a police firing squad executing looters in a British city. *The Sunday Times Magazine* asked me to find out how far Watkins's nightmare scenario corresponded with government planning. After a little prodding, the Home Office revealed a good deal more of its secret civil defence system. Even after the article had been published, I remained interested in the subject, and tried to answer questions the Home Office had raised in my mind, but had not answered. After a good deal of research, using openly published material and what had already been given me by the Home Office, I wrote a book called *Beneath the City Streets* (Allen Lane 1969, Penguin 1970). Before publication, the manuscript was sent to James Callaghan, then Home Secretary, and returned without comment. Although

Above: "The War Game", a 1965 Peter Watkins BBC propaganda film, is debunked at the previous post linked here. See also our discussion of Phil Bolsover's CND "Civil Defence – the Cruellest Confidence Trick", linked here.

**31 December 2013 update: statistics for monthly visitors to this blog (see graph below: total visitors from May 2007 to Dec 2013 is over 550,000, of whom 9.7% visited the Glasstone and Dolan page)**





Pageviews today	373
Pageviews yesterday	449
Pageviews last month	15,770
Pageviews all time history	550,166

[Don't track your own pageviews](#)

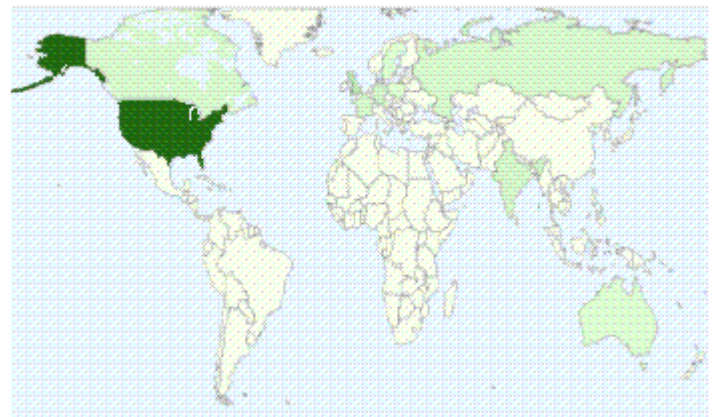
## Posts

[More »](#)

Entry	Pageviews
<a href="#">Samuel Glasstone and Philip J. Dolan</a> Mar 29, 2006, 27 comments	53347
<a href="#">EMP radiation from nuclear space ...</a> Mar 29, 2006, 23 comments	51324
<a href="#">Declassified data on structures exp...</a> May 3, 2011, 2 comments	25661
<a href="#">U.K. Home Office Scientific Advisor...</a> Aug 1, 2006, 26 comments	19926
<a href="#">How weapons and war effects lies f...</a> Mar 1, 2010, 9 comments	17921

## Audience

[More »](#)



"In the wake of the Cultural Revolution and now of the recession I observe a mounting pressure to co-operate and to promote 'teamwork'. **For its anti-individualistic streak, such a drive is of course highly suspect; some people may not be so sensitive to it, but having seen the Hitlerjugend in action suffices for the rest of your life to be very wary of 'team spirit'. Very.** I have even read one text that argued that university scientists should co-operate more in order to become more competitive..... Bureaucracies are in favour of teamwork because a few groups are easier to control than a large number of rugged individuals. Granting agencies are in favour of supporting large established organizations rather than individual researchers, because the support of the latter, though much cheaper, is felt to be more risky; it also requires more thinking per dollar funding. Teamwork is also promoted because it is supposed to be more efficient, though in general this hope is not justified. ... the co-operation seems more to force the researchers to broaden their outlook than to increase the efficiency of the research. ... everybody complains about the amount of red tape ... Why should a vigorous, flourishing department seek co-operation when it is doing just fine all by itself? It is the weak departments that are more tempted to seek each other's support and to believe that there is might in numbers. But such co-operation is of course based on the theory that, when you tie two stones together, the combination will float."

– Professor Edsger Wybe Dijkstra (1930-2002), *The strengths of the academic enterprise*, EWD 1175, University of Texas, 9 February 1994.

posted by Nuclear Weapons Effects 8:55 pm 0 comments

Peace through tested, proved and practical declassified countermeasures against the effects of nuclear weapons, chemical weapons and conventional weapons. Credible deterrence through simple, effective protection against invasions and collateral damage. Discussions of the facts as opposed to inaccurate, misleading lies of the "disarm or be annihilated" political dogma variety. Hiroshima and Nagasaki anti-nuclear propaganda debunked by the hard facts. Walls not wars. Walls bring people together by stopping divisive terrorists. CONVENTIONAL WARS HAVE KILLED TENS OF MILLIONS OF PEOPLE, NUCLEAR WEAPONS CAN RAPIDLY DETER THIS REAL THREAT TO PEACE WITH MINIMAL CASUALTIES. 'During the critical period 8-15 February [1968], the U.S. command realized [that conventional] bombing was not sufficiently effective. ... The air campaign dropped over 110,000 tons of bombs and napalm on the area around Khe Sanh during the 77-day siege ... the most heavily bombed target in the history of conventional warfare.' – W. C. Yengst, S. J. Lukasik, and M. A. Jensen, *Nuclear Weapons that went to War*, SAID report DSWA-TR-97-25, September 1998 (quoted in the 2015 book by the secret *Capabilities of Nuclear Weapons* editor, Dr Harold L. Brode, *Nuclear Weapons in the Cold War*, page 287). British Nuclear Test Civil Defence Research

CHANGE 1  
Field Manual No 101-31-1

**NUCLEAR WEAPONS EMPLOYMENT  
DOCTRINE AND PROCEDURES**

**Radius of vulnerability (emergency risk criterion: 5% combat ineffectiveness)**

Figure 54. Radii of Vulnerability.

Yield (KT)	PERSONNEL (LL) IN— (Based on Governing Effect)				
	Open	Open Foxholes	APCs	Tanks	Earth Shelter
Radii listed are distances at which a 5 percent incidence of effect occurs. HOB used is $60W^{1/3}$ meters.					
(Distances are in meters)					
0.1	700	600	600	500	300
1	1200	900	900	800	500
10	3200	1300	1300	1250	900
20	4000	1500	1450	1400	1000
100	8000	1900	1800	1800	1400
200	12000	2000	1900	1900	1500
300	14000	2100	1950	1950	1600

**Protective factor = ratio of area of effect in the open, to area of effect for shelter**

Example: for 300 kt, the protective factor of open foxholes is equal to  $(14,000)^2 / (2,100)^2 = 44$ .

Open	Open Foxholes	APCs	Tanks	Earth Shelter	Yield (KT)
1	1.36	1.36	1.96	5.44	0.1
1	1.78	1.78	2.25	5.76	1
1	6.06	6.06	6.55	12.6	10
1	7.11	7.61	8.16	16.0	20
1	17.7	19.8	19.8	32.7	100
1	36.0	39.9	39.9	64.0	200
1	44.4	51.5	51.5	76.6	300

Calculation of the injury-averting protective factors by simple open foxholes and earth shelters, as a function of weapon yield. Most countermeasures are relatively ineffective against tactical nuclear weapons (due to the predominating neutron radiation effect at 0.1 kt yield), but are extremely effective against strategic nuclear weapons with yields of 100, 200 and 300 kt (protective factors of 44 to 77).

The definition of protective factor used here is the factor by which casualties numbers are reduced.

Richard P. Feynman, 'This Unscientific Age', in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

'Now, I say if a man is absolutely honest and wants to protect the populace from the effects of nuclear activity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural



cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.'

*"If a man reads or hears a criticism of anything in which he has an interest, watch ... if he shows concern with any question except 'is it true?' he thereby reveals that his own attitude is unscientific. Likewise if ... he judges an idea not on its merits but with reference to the author of it; if he criticizes it as 'heresy'; if he argues that authority must be right because it is authority ... The path of truth is paved with critical doubt, and lighted by the spirit of objective enquiry... the majority of people have resented what seems in retrospect to have been purely matter of fact ... nothing has aided the persistence of falsehood, and the evils resulting from it, more than the unwillingness of good people to admit the truth ... the tendency continues to be shocked by natural comment, and to hold certain things too 'sacred' to think about. ... How rarely does one meet anyone whose first reaction to anything is to ask: 'is it true?' Yet, unless that is a man's natural reaction, it shows that truth is not uppermost in his mind, and unless it is, true progress is unlikely."*

- Sir Basil Henry Liddell Hart, *Why Don't We Learn from History?*, PEN Books, 1944; revised edition, Allen and Unwin, 1972.

*Civil defense countermeasures, to be taken seriously by the population, require the publication of solid facts with the scientific evidence to support those facts against political propaganda to the contrary. Secrecy over the effects of nuclear weapons tests does not hinder plutonium and missile production by rogue states, but it does hinder civil defense countermeasures, by permitting lying political propaganda to go unopposed (see linked post, here).*

Terrorists successfully prey on the vulnerable. The political spreading of lies concerning threats and the alleged 'impossibility' of all countermeasures, terrorizing the population in order to 'justify' supposedly pro-peace disarmament policies in the 1920s-1930s, resulted in the secret rearmament of fascist states which were terrorizing the Jews and others, eventually leading to World War II.

Political exaggerations about nuclear weapons effects today:

(1) encourage terrorist states and other groups to secretly invest in such weapons to use either for political intimidation or for future use against countries which have no countermeasures, and

(2) falsely dismiss, in the eyes of the media and the public, cheap relatively effective countermeasures like civil defense and ABM.

Therefore, doom-mongering media lies *make us vulnerable to the proliferation threat* today in two ways just as they led to both world wars:



(1) Exaggerations of offensive technology and a down-playing of simple countermeasures such as trenches, encouraged belligerent states to start World War I in the false belief that modern technology implied overwhelming firepower which would terminate the war quickly on the basis of offensive preparedness: if the facts about simple trench countermeasures against shelling and machine guns during the American Civil War had been properly understood, it would have been recognised by Germany that a long war based on munitions production and logistics would be necessary, and war would have been seen to be likely to lead to German defeat against countries with larger overseas allies and colonies that could supply munitions and the other resources required to win a long war.

(2) Exaggerations of aerial bombardment technology after World War I led to disarmament 'supported by' false claims that it was impossible to have any defense against a perceived threat of instant annihilation from thousands of aircraft carrying gas and incendiary bombs, encouraging fascists to secretly rearm in order to successfully take advantage of the fear and vulnerability caused by this lying political disarmament propaganda.

Contrived dismissal of civil defense by Marxist "Cambridge Scientists Anti-War Group" bigots: (a) appeased war-mongering enemies, and (b) maximised war mortality rates. Idealism kills. Super effective, fully proof-tested, cheap civil defense makes nuclear deterrence credible to stop conventional war devastation by avoiding collateral damage, tit-for-tat retaliation and escalation.

Historically, it has been proved that having weapons is not enough to guarantee a reasonable measure of safety from terrorism and rogue states; countermeasures are also needed, both to make any deterrent credible and to negate or at least mitigate the effects of a terrorist attack. Some people who wear seatbelts die in car crashes; some people who are taken to hospital in ambulances, even in peace-time, die. Sometimes, lifebelts and lifeboats cannot save lives at sea. This lack of a 100% success rate in saving lives doesn't disprove the value of everyday precautions or of hospitals and medicine. Hospitals don't lull motorists into a false sense of security, causing them to drive faster and cause more accidents. Like-minded 'arguments' against ABM and civil defense are similarly vacuous.

'As long as the threat from Iran persists, we will go forward with a missile system that is cost-effective and proven. If the Iranian threat is eliminated, we will have a stronger basis for security, and the driving force for missile-defense construction in Europe will be removed.'

– President Obama, Prague Castle, Czech Republic, 4 April 2009.

Before 9/11, Caspar Weinberger was quizzed by skeptical critics on the BBC News program *Talking Point*, Friday, May 4, 2001: *Caspar Weinberger quizzed on new US Star Wars ABM plans:*

'The [ABM] treaty was in 1972 ... The theory ... supporting the ABM treaty [which prohibits ABM, thus making nations vulnerable to terrorism] ... that it will prevent an arms race ... is perfect nonsense

because we have had an arms race all the time we have had the ABM treaty, and we have seen the greatest increase in proliferation of nuclear weapons that we have ever had. ... So the ABM treaty preventing an arms race is total nonsense. ...

'You have to understand that without any defences whatever you are very vulnerable. It is like saying we don't like chemical warfare – we don't like gas attacks – so we are going to give up and promise not to have any defences ever against them and that of course would mean then we are perfectly safe. ...

'The Patriot was not a failure in the Gulf War – the Patriot was one of the things which defeated the Scud and in effect helped us win the Gulf War. One or two of the shots went astray but that is true of every weapon system that has ever been invented. ...

'The fact that a missile defence system wouldn't necessarily block a suitcase bomb is certainly not an argument for not proceeding with a missile defence when a missile that hits can wipe out hundreds of thousands of lives in a second. ...

'The curious thing about it is that missile defence is not an offensive weapon system – missile defence cannot kill anybody. Missile defence can help preserve and protect your people and our allies, and the idea that you are somehow endangering people by having a defence strikes me almost as absurd as saying you endanger people by having a gas mask in a gas attack. ...

'President Bush said that we were going ahead with the defensive system but we would make sure that nobody felt we had offensive intentions because we would accompany it by a unilateral reduction of our nuclear arsenal. It seems to me to be a rather clear statement that proceeding with the missile defence system would mean fewer arms of this kind.

'You have had your arms race all the time that the ABM treaty was in effect and now you have an enormous accumulation and increase of nuclear weapons and that was your arms race promoted by the ABM treaty. Now if you abolish the ABM treaty you are not going to get another arms race – *you have got the arms already there* – and if you accompany the missile defence construction with the unilateral reduction of our own nuclear arsenal then it seems to me you are finally getting some kind of inducement to reduce these weapons.'

*Before the ABM system is in place, and afterwards if ABM fails to be 100% effective in an attack, or is bypassed by terrorists using a bomb in a suitcase or in a ship, civil defense is required and can be effective at saving lives:*

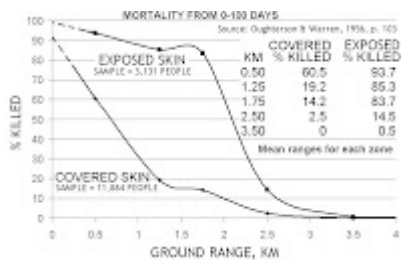
'Paradoxically, the more damaging the effect, that is the farther out its lethality stretches, the more can be done about it, because in the last fall of its power it covers vast areas, where small mitigations will save very large numbers of people.'



– Peter Laurie, *Beneath the City Streets: A Private Inquiry into the Nuclear Preoccupations of Government*, Penguin, 1974.

'The purpose of a book is to save people [the] time and effort of digging things out for themselves. ... we have tried to leave the reader with something tangible – what a certain number of calories, roentgens, etc., means in terms of an effect on the human being. ... we must think of the people we are writing for.'

– Dr Samuel Glasstone, DSc, letter dated 1 February 1957 to Colonel Dent L. Lay, Chief, Weapons Effects Division, U.S. Armed Forces Special Weapons Project, Washington, D.C., pages 2 and 4, concerning the preparation of *The Effects of Nuclear Weapons*.



Glasstone and Dolan stated in *The Effects of Nuclear Weapons* (1977), Table 12.17 on page 546, that the median distance in Hiroshima for survival after 20 days was 0.12 miles for people in concrete buildings and 1.3 miles for people standing outdoors. Therefore the median distances for survival in modern city buildings and in the open differed by a factor of 11 for Hiroshima; the difference in areas was thus a factor of  $11^2$  or about 120. Hence, taking cover in modern city buildings reduces the casualty rates and the risks of being killed by a factor of 120 for Hiroshima conditions, contrary to popular media presented political propaganda that civil defence is hopeless. This would reduce 120,000 casualties to 1,000 casualties.

From Dr Glasstone's *Effects of Nuclear Weapons* (1962/64 ed., page 631): 'At distances between 0.3 and 0.4 mile from ground zero in Hiroshima the average survival rate, for at least 20 days after the nuclear explosion, was less than 20 percent. Yet in two reinforced concrete office buildings, at these distances, almost 90 percent of the nearly 800 occupants survived more than 20 days, although some died later of radiation injury. Furthermore, of approximately 3,000 school students who were in the open and unshielded within a mile of ground zero at Hiroshima, about 90 percent were dead or missing after the explosion. But of nearly 5,000 students in the same zone who were shielded in one way or another, only 26 percent were fatalities. ... survival in Hiroshima was possible in buildings at such distances that the overpressure in the open was 15 to 20 pounds per square inch. ... it is evident ... that the area over which protection could be effective in saving lives is roughly eight to ten times as great as that in which the chances of survival are small.'

Lord Mayhew, House of Lords debate on Civil Defence (General Local Authority Functions)

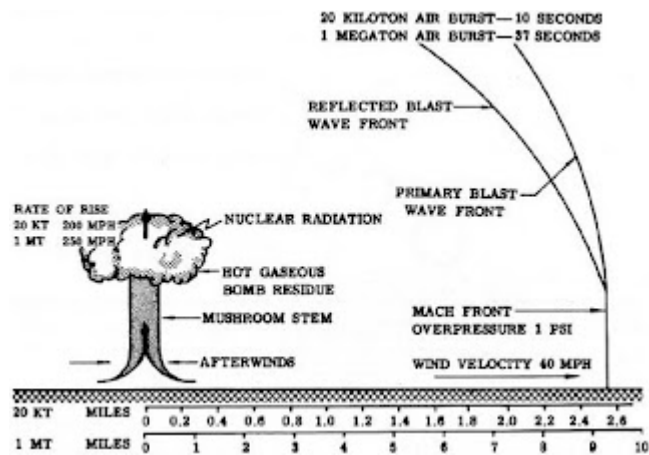
Functions, Hansard, vol. 444, cc. 523-49, 1 November 1983: '... if there had been effective civil

defence at Hiroshima probably thousands of lives would have been saved and much human suffering would have been avoided. There is no question about it. ...'

Since the 1977 update by Glasstone and Dolan, extensive new updates to EM-1 for a further revised edition of *The Effects of Nuclear Weapons* have not actually been published with unlimited public distribution, due to President Carter's 1979 executive order which transferred responsibility for civil defense from the jurisdiction of the U.S. Department of Defense's Defense Civil Preparedness Agency to the new agency (which is not an Agency of the U.S. Department of Defense, and is not concerned with the analysis of nuclear weapons test effects data), the Federal Emergency Management Agency. However, the February 1997 U.S. Department of Defense's Defense Special Weapons Agency 0602715H RDT&E Budget Item Justification Sheet (R-2 Exhibit) states that a revision of Glasstone and Dolan's unclassified *Effects of Nuclear Weapons* was budgeted for 1997-9:

"FY 1997 Plans: ... Provide text to update Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... Update the unclassified textbook entitled, *The Effects of Nuclear Weapons*. ... Continue revision of Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... FY1999 Plans ... Disseminate updated *The Effects of Nuclear Weapons*."

The new publications are either classified or unclassified with limited distribution restrictions (e.g., Bridgman's *Introduction to the Physics of Nuclear Weapons Effects*, which includes several chapters on nuclear weapons design to enable initial radiation outputs to be calculated precisely) which prevents up-to-date basic nuclear effects information to justify civil defense against the latest nuclear threats from being widely disseminated; the books are printed for use only by government agencies. The problem with this approach is that widespread public understanding of the best information for civil defense countermeasures is prevented.



'The evidence from Hiroshima indicates that blast survivors, both injured and uninjured, in buildings later consumed by fire [caused by the blast overturning charcoal braziers used for breakfast in inflammable wooden houses filled with easily ignitable bamboo furnishings and paper screens] were generally able to move to safe areas following the explosion. Of 130 major buildings studied by the U.S. Strategic Bombing Survey ... 107 were ultimately burned out ... Of those suffering fire, about 20

percent were burning after the first half hour. The remainder were consumed by fire spread, some as late as 15 hours after the blast. This situation is not unlike the one our computer-based fire spread model described for Detroit.'

– Defense Civil Preparedness Agency, U.S. Department of Defense, *DCPA Attack Environment Manual, Chapter 3: What the Planner Needs to Know About Fire Ignition and Spread*, report CPG 2-1A3, June 1973, Panel 27.

*The Effects of the Atomic Bomb on Hiroshima, Japan*, US Strategic Bombing Survey, Pacific Theatre, report 92, volume 2 (May 1947, secret):

Volume one, page 14:

"... the city lacked buildings with fire-protective features such as automatic fire doors and automatic sprinkler systems", and pages 26-28 state the heat flash in Hiroshima was only:

"... capable of starting primary fires in exposed, easily combustible materials such as dark cloth, thin paper, or dry rotted wood exposed to direct radiation at distances usually within 4,000 feet of the point of detonation (AZ)."

Volume two examines the firestorm and the ignition of clothing by the thermal radiation flash in Hiroshima:

Page 24:

"Scores of persons throughout all sections of the city were questioned concerning the ignition of clothing by the flash from the bomb. ... Ten school boys were located during the study who had been in school yards about 6,200 feet east and 7,000 feet west, respectively, from AZ [air zero]. These boys had flash burns on the portions of their faces which had been directly exposed to rays of the bomb. The boys' stories were consistent to the effect that their clothing, apparently of cotton materials, 'smoked,' but did not burst into flame. ... a boy's coat ... started to smoulder from heat rays at 3,800 feet from AZ." [Contrast this to the obfuscation and vagueness in Glasstone, *The Effects of Nuclear Weapons!*]

Page 88:

"Ignition of the City. ... Only directly exposed surfaces were flash burned. Measured from GZ, flash burns on wood poles were observed at 13,000 feet, granite was roughened or spalled by heat at 1,300 feet, and vitreous tiles on roofs were blistered at 4,000 feet. ... six persons who had been in reinforced-concrete buildings within 3,200 feet of air zero stated that black cotton blackout curtains were ignited by radiant heat ... dark clothing was scorched and, in some cases, reported to have burst



into flame from flash heat [*although as the 1946 unclassified USSBS report admits, most immediately beat the flames out with their hands without sustaining injury, because the clothing was not drenched in gasoline, unlike peacetime gasoline tanker road accident victims*]

“... but a large proportion of over 1,000 persons questioned was in agreement that a great majority of the original fires was started by debris falling on kitchen charcoal fires, by industrial process fires, or by electric short circuits. Hundreds of fires were reported to have started in the centre of the city within 10 minutes after the explosion. Of the total number of buildings investigated [135 buildings are listed] 107 caught fire, and in 69 instances, the probable cause of initial ignition of the buildings or their contents was as follows: (1) 8 by direct radiated heat from the bomb (primary fire), (2) 8 by secondary sources, and (3) 53 by fire spread from exposed [wooden] buildings.”

‘It is true that the Soviets have tested nuclear weapons of a yield higher than that which we thought necessary, but the 100-megaton bomb of which they spoke two years ago does not and will not change the balance of strategic power. The United States has chosen, deliberately, to concentrate on more mobile and more efficient weapons, with lower but entirely sufficient yield ...’ – President John F. Kennedy in his television broadcast to the American public, 26 July 1963.

‘During World War II many large cities in England, Germany, and Japan were subjected to terrific attacks by high-explosive and incendiary bombs. Yet, when proper steps had been taken for the protection of the civilian population and for the restoration of services after the bombing, there was little, if any, evidence of panic. It is the purpose of this book to state the facts concerning the atomic bomb, and to make an objective, scientific analysis of these facts. It is hoped that as a result, although it may not be feasible completely to allay fear, it will at least be possible to avoid panic.’

– Dr George Gamow (the big bang cosmologist), Dr Samuel Glasstone, DSc (Executive Editor of the book), and Professor Joseph O. Hirschfelder, *The Effects of Atomic Weapons*, Chapter 1, p. 1, Paragraph 1.3, U.S. Department of Defense, September 1950.

‘The consequences of a multiweapon nuclear attack would certainly be grave ... Nevertheless, recovery should be possible if plans exist and are carried out to restore social order and to mitigate the economic disruption.’

– Philip J. Dolan, editor of *Nuclear Weapons Employment* FM 101-31 (1963), *Capabilities of Nuclear Weapons* DNA-EM-1 (1972), and *The Effects of Nuclear Weapons* (1977), Stanford Research Institute, Appendix A of the U.S. National Council on Radiological protection (NCRP) symposium *The Control of Exposure to the Public of Ionising Radiation in the Event of Accident or Attack*, 1981.

‘Suppose the bomb dropped on Hiroshima had been 1,000 times as powerful ... It could not have killed 1,000 times as many people, but at most the entire population of Hiroshima ... [regarding the

hype about various nuclear "overkill" exaggerations] there is enough water in the oceans to drown everyone ten times.'

– Professor Brian Martin, PhD (physics), 'The global health effects of nuclear war', *Current Affairs Bulletin*, Vol. 59, No. 7, December 1982, pp. 14-26.

In 1996, half a century after the nuclear detonations, data on cancers from the Hiroshima and Nagasaki survivors was published by D. A. Pierce et al. of the Radiation Effects Research Foundation, RERF (*Radiation Research* vol. 146 pp. 1-27; *Science* vol. 272, pp. 632-3) for 86,572 survivors, of whom 60% had received bomb doses of over 5 mSv (or 500 millirem in old units) suffering 4,741 cancers of which only 420 were due to radiation, consisting of 85 leukemias and 335 solid cancers.

'Today we have a population of 2,383 [radium dial painter] cases for whom we have reliable body content measurements. . . . All 64 bone sarcoma [cancer] cases occurred in the 264 cases with more than 10 Gy [1,000 rads], while no sarcomas appeared in the 2,119 radium cases with less than 10 Gy.'

– Dr Robert Rowland, Director of the Center for Human Radiobiology, *Bone Sarcoma in Humans Induced by Radium: A Threshold Response?*, Proceedings of the 27th Annual Meeting, European Society for Radiation Biology, Radioprotection colloquies, Vol. 32CI (1997), pp. 331-8.

Zbigniew Jaworowski, 'Radiation Risk and Ethics: Health Hazards, Prevention Costs, and Radiophobia', *Physics Today*, April 2000, pp. 89-90:

'... it is important to note that, given the effects of a few seconds of irradiation at Hiroshima and Nagasaki in 1945, a threshold near 200 mSv may be expected for leukemia and some solid tumors. [Sources: UNSCEAR, *Sources and Effects of Ionizing Radiation*, New York, 1994; W. F. Heidenreich, et al., *Radiat. Environ. Biophys.*, vol. 36 (1999), p. 205; and B. L. Cohen, *Radiat. Res.*, vol. 149 (1998), p. 525.] For a protracted lifetime natural exposure, a threshold may be set at a level of several thousand millisieverts for malignancies, of 10 grays for radium-226 in bones, and probably about 1.5-2.0 Gy for lung cancer after x-ray and gamma irradiation. [Sources: G. Jaikrishan, et al., *Radiation Research*, vol. 152 (1999), p. S149 (for natural exposure); R. D. Evans, *Health Physics*, vol. 27 (1974), p. 497 (for radium-226); H. H. Rossi and M. Zaider, *Radiat. Environ. Biophys.*, vol. 36 (1997), p. 85 (for radiogenic lung cancer).] The hormetic effects, such as a decreased cancer incidence at low doses and increased longevity, may be used as a guide for estimating practical thresholds and for setting standards. ...

'Though about a hundred of the million daily spontaneous DNA damages per cell remain unrepaired or misrepaired, apoptosis, differentiation, necrosis, cell cycle regulation, intercellular interactions, and the immune system remove about 99% of the altered cells. [Source: R. D. Stewart, *Radiation Research*, vol. 152 (1999), p. 101.] ...

'[Due to the Chernobyl nuclear accident in 1986] as of 1998 (according to UNSCEAR), a total of 1,791 thyroid cancers in children had been registered. About 93% of the youngsters have a prospect of full recovery. [Source: C. R. Moir and R. L. Telander, *Seminars in Pediatric Surgery*, vol. 3 (1994), p. 182.] ... The highest average thyroid doses in children (177 mGy) were accumulated in the Gomel region of Belarus. The highest incidence of thyroid cancer (17.9 cases per 100,000 children) occurred there in 1995, which means that the rate had increased by a factor of about 25 since 1987.

'This rate increase was probably a result of improved screening [not radiation!]. Even then, the incidence rate for occult thyroid cancers was still a thousand times lower than it was for occult thyroid cancers in nonexposed populations (in the US, for example, the rate is 13,000 per 100,000 persons, and in Finland it is 35,600 per 100,000 persons). Thus, given the prospect of improved diagnostics, there is an enormous potential for detecting yet more [fictitious] "excess" thyroid cancers. In a study in the US that was performed during the period of active screening in 1974-79, it was determined that the incidence rate of malignant and other thyroid nodules was greater by 21-fold than it had been in the pre-1974 period. [Source: Z. Jaworowski, *21st Century Science and Technology*, vol. 11 (1998), issue 1, p. 14.]'

'Professor Edward Lewis used data from four independent populations exposed to radiation to demonstrate that the incidence of leukemia was linearly related to the accumulated dose of radiation. ... Outspoken scientists, including Linus Pauling, used Lewis's risk estimate to inform the public about the danger of nuclear fallout by estimating the number of leukemia deaths that would be caused by the test detonations. In May of 1957 Lewis's analysis of the radiation-induced human leukemia data was published as a lead article in *Science* magazine. In June he presented it before the Joint Committee on Atomic Energy of the US Congress.' – Abstract of thesis by Jennifer Caron, *Edward Lewis and Radioactive Fallout: the Impact of Caltech Biologists Over Nuclear Weapons Testing in the 1950s and 60s*, Caltech, January 2003.

Dr John F. Loutit of the Medical Research Council, Harwell, England, in 1962 wrote a book called *Irradiation of Mice and Men* (University of Chicago Press, Chicago and London), discrediting the pseudo-science from geneticist Edward Lewis on pages 61, and 78-79:

'... Mole [R. H. Mole, *Brit. J. Radiol.*, v32, p497, 1959] gave different groups of mice an integrated total of 1,000 r of X-rays over a period of 4 weeks. But the dose-rate – and therefore the radiation-free time between fractions – was varied from 81 r/hour intermittently to 1.3 r/hour continuously. The incidence of leukemia varied from 40 per cent (within 15 months of the start of irradiation) in the first group to 5 per cent in the last compared with 2 per cent incidence in irradiated controls. ...

'What Lewis did, and which I have not copied, was to include in his table another group – spontaneous incidence of leukemia (Brooklyn, N.Y.) – who are taken to have received only natural background radiation throughout life at the very low dose-rate of 0.1-0.2 rad per year: the best estimate is listed as  $2 \times 10^{-6}$  like the others in the table. But the value of  $2 \times 10^{-6}$  was not calculated



from the data as for the other groups; it was merely adopted. By its adoption and multiplication with the average age in years of Brooklynners – 33.7 years and radiation dose per year of 0.1-0.2 rad – a mortality rate of 7 to 13 cases per million per year due to background radiation was deduced, or some 10-20 per cent of the observed rate of 65 cases per million per year. ...

'All these points are very much against the basic hypothesis of Lewis of a linear relation of dose to leukemic effect irrespective of time. Unhappily it is not possible to claim for Lewis's work as others have done, "It is now possible to calculate – within narrow limits – how many deaths from leukemia will result in any population from an increase in fall-out or other source of radiation" [Leading article in *Science*, vol. 125, p. 963, 1957]. This is just wishful journalese.

'The burning questions to me are not what are the numbers of leukemia to be expected from atom bombs or radiotherapy, but what is to be expected from natural background .... Furthermore, to obtain estimates of these, I believe it is wrong to go to [1950s inaccurate, dose rate effect ignoring, data from] atom bombs, where the radiations are qualitatively different [i.e., including effects from neutrons] and, more important, the dose-rate outstandingly different.'

Samuel Glasstone and Philip J. Dolan, *The Effects of Nuclear Weapons*, 3rd ed., 1977, pp. 611-3:

'From the earlier studies of radiation-induced mutations, made with fruitflies [by Nobel Laureate Hermann J. Muller and other geneticists who worked on plants, who falsely hyped their insect and plant data as valid for mammals like humans during the June 1957 U.S. Congressional Hearings on fallout effects], it appeared that the number (or frequency) of mutations in a given population ... is proportional to the total dose ... More recent experiments with mice, however, have shown that these conclusions need to be revised, at least for mammals. [*Mammals are biologically closer to humans, in respect to DNA repair mechanisms, than short-lived insects whose life cycles are too small to have forced the evolutionary development of advanced DNA repair mechanisms, unlike mammals that need to survive for decades before reproducing.*] When exposed to X-rays or gamma rays, the mutation frequency in these animals has been found to be dependent on the exposure (or dose) rate ...

'**At an exposure rate of 0.009 roentgen per minute [0.54 R/hour], the total mutation frequency in female mice is indistinguishable from the spontaneous frequency.** [Emphasis added.] There thus seems to be an exposure-rate threshold below which radiation-induced mutations are absent ... with adult female mice ... a delay of at least seven weeks between exposure to a substantial dose of radiation, either neutrons or gamma rays, and conception causes the mutation frequency in the offspring to drop almost to zero. ... recovery in the female members of the population would bring about a substantial reduction in the 'load' of mutations in subsequent generations.'

 Bernard Shaw cynically explains groupthink brainwashing bias:

'We cannot help it because we are so constituted that we always believe finally what we wish to believe. The moment we want to believe something, we suddenly see all the arguments for it and become blind to the arguments against it. The moment we want to disbelieve anything we have previously believed, we suddenly discover not only that there is a mass of evidence against, but that this evidence was staring us in the face all the time.'

From the essay titled 'What is Science?' by Professor Richard P. Feynman, presented at the fifteenth annual meeting of the National Science Teachers Association, 1966 in New York City, and published in *The Physics Teacher*, vol. 7, issue 6, 1968, pp. 313-20:

'... great religions are dissipated by following form without remembering the direct content of the teaching of the great leaders. In the same way, it is possible to follow form and call it science, but that is pseudo-science. In this way, we all suffer from the kind of tyranny we have today in the many institutions that have come under the influence of pseudoscientific advisers.

'We have many studies in teaching, for example, in which people make observations, make lists, do statistics, and so on, but these do not thereby become established science, established knowledge. They are merely an imitative form of science analogous to the South Sea Islanders' airfields – radio towers, etc., made out of wood. The islanders expect a great airplane to arrive. They even build wooden airplanes of the same shape as they see in the foreigners' airfields around them, but strangely enough, their wood planes do not fly. The result of this pseudoscientific imitation is to produce experts, which many of you are. ... you teachers, who are really teaching children at the bottom of the heap, can maybe doubt the experts. As a matter of fact, I can also define science another way: Science is the belief in the ignorance of experts.'

Richard P. Feynman, 'This Unscientific Age', in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

'Now, I say if a man is absolutely honest and wants to protect the populace from the effects of radioactivity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.'

Feynman is *not* making a point about low level radiation effects, but about the politics of ignoring the massive natural background radiation dose, while provoking hysteria over much smaller measured fallout pollution radiation doses. Why is the anti-nuclear lobby so concerned about banning nuclear energy – which is not possible even in principle since most of our nuclear radiation is from the sun and from supernova debris contaminating the Earth from the explosion that created the solar system 4,540 million years ago – when they could cause much bigger radiation dose reductions to the

population by concentrating on the bigger radiation source, natural background radiation. It is possible to shield natural background radiation by the air, e.g. by moving the population of high altitude cities to lower altitudes where there is more air between the people and outer space, or banning the use of high-altitude jet aircraft. The anti-nuclear lobby, as Feynman stated back in the 1960s, didn't crusade to reduce the bigger dose from background radiation. Instead they chose to argue against the *much smaller* doses from fallout pollution. Feynman's argument is still today falsely interpreted as a political statement, when it is actually exposing pseudo-science and countering political propaganda. It is still ignored by the media. It has been pointed out by Senator Hickenlooper on page 1060 of the May-June 1957 U.S. Congressional Hearings before the Special Subcommittee on Radiation of the Joint Committee on Atomic Energy, *The Nature of Radioactive Fallout and Its Effects on Man*:

'I presume all of us would earnestly hope that we never had to test atomic weapons ... but by the same token I presume that we want to save thousands of lives in this country every year and we could just abolish the manufacture of [road accident causing] automobiles ...'

Dihydrogen monoxide is a potentially very dangerous chemical containing hydrogen and oxygen which has caused numerous severe burns by scalding and deaths by drowning, contributes to the greenhouse effect, accelerates corrosion and rusting of many metals, and contributes to the erosion of our natural landscape: 'Dihydrogen monoxide (DHMO) is colorless, odorless, tasteless, and kills uncounted thousands of people every year. Most of these deaths are caused by accidental inhalation of DHMO, but the dangers of dihydrogen monoxide do not end there. Prolonged exposure to its solid form causes severe tissue damage. Symptoms of DHMO ingestion can include excessive sweating and urination, and possibly a bloated feeling, nausea, vomiting and body electrolyte imbalance. For those who have become dependent, DHMO withdrawal means certain death.'

From the site for the petition against dihydrogen monoxide: 'Please sign this petition and help stop This Invisible Killer. Get the government to do something now. ... Contamination Is Reaching Epidemic Proportions! Quantities of dihydrogen monoxide have been found in almost every stream, lake, and reservoir in America today. But the pollution is global, and the contaminant has even been found in Antarctic ice. DHMO has caused millions of dollars of property damage in the Midwest, and recently California.'

A recent example of the pseudoscientific radiation 'education' masquerading as science that Feynman (quoted above) objected to in the 1960s was published in 2009 in an article called 'The proportion of childhood leukaemia incidence in Great Britain that may be caused by natural background ionizing radiation' in *Leukemia*, vol. 23 (2009), pp. 770-776, which falsely asserts – in contradiction to the evidence that the no-threshold model is *contrary* to Hiroshima and Nagasaki data: 'Risk models based primarily on studies of the Japanese atomic bomb survivors imply that low-level exposure to ionizing radiation, including ubiquitous natural background radiation, also raises the risk of childhood leukaemia. Using two sets of recently published leukaemia risk models and estimates of natural



background radiation red-bone-marrow doses received by children, about 20% of the cases of childhood leukaemia in Great Britain are predicted to be attributable to this source.' The authors of this pseudoscience which is the opposite of the facts are R. Wakeford (Dalton Nuclear Institute, University of Manchester, Manchester, UK), G. M. Kendall (Childhood Cancer Research Group, Oxford, UK), and M. P. Little (Department of Epidemiology and Public Health, Imperial College, London, UK). It is disgusting and sinful that the facts about childhood leukemia are being lied on so blatantly for non-scientific purposes, and it is to be hoped that these leukemia investigators will either correct their errors or alternatively be banned from using scientific literature to promote false dogma for deception until they mend the error of their ways and repent their sins in this matter.

Protein P53, discovered only in 1979, is encoded by gene TP53, which occurs on human chromosome 17. P53 also occurs in other mammals including mice, rats and dogs. P53 is one of the proteins which continually repairs breaks in DNA, which easily breaks at body temperature: the DNA in each cell of the human body suffers at least two single strand breaks every second, and one double strand (i.e. complete double helix) DNA break occurs at least once every 2 hours (5% of radiation-induced DNA breaks are double strand breaks, while 0.007% of spontaneous DNA breaks at body temperature are double strand breaks)! Cancer occurs when several breaks in DNA happen to occur by chance at nearly the same time, giving several loose strand ends at once, which repair proteins like P53 then repair incorrectly, causing a mutation which can be proliferated somatically. This cannot occur when only one break occurs, because only two loose ends are produced, and P53 will reattach them correctly. But if low-LET ionising radiation levels are increased to a certain extent, causing more single strand breaks, P53 works faster and is able deal with faster breaks as they occur, so that multiple broken strand ends do not arise. This prevents DNA strands being repaired incorrectly, and prevents cancer – a result of mutation caused by faults in DNA – from arising. Too much radiation of course overloads the P53 repair mechanism, and then it cannot repair breaks as they occur, so multiple breaks begin to appear and loose ends of DNA are wrongly connected by P53, causing an increased cancer risk.

1. DNA-damaging free radicals are equivalent to a source of sparks which is always present naturally.
2. Cancer is equivalent the fire you get if the sparks are allowed to ignite the gasoline, i.e. if the free radicals are allowed to damage DNA without the damage being repaired.
3. Protein P53 is equivalent to a fire suppression system which is constantly damping out the sparks, or repairing the damaged DNA so that cancer doesn't occur.

In this way of thinking, the 'cause' of cancer will be down to a failure of a DNA repairing enzyme like protein P53 to repair the damage.

Dr. Tone Orient, 'Homeland Security for Physicians', *Journal of American Physicians and Surgeons*, vol. 1, number 3, Fall 2006, pp. 75-9:

'In the 1960s, a group of activist physicians called Physicians for Social Responsibility (PSR) undertook to "educate the medical profession and the world about the dangers of nuclear weapons," beginning with a series of articles in the *New England Journal of Medicine*. [Note that journal was publishing information for anti-civil defense propaganda back in 1949, e.g. the article in volume 241, pp. 647-53 of *New England Journal of Medicine* which falsely suggests that civil defense in nuclear war would be hopeless because a single burned patient in 1947 with 40% body area burns required 42 oxygen tanks, 36 pints of plasma, 40 pints of whole blood, 104 pints of fluids, 4,300 m of gauze, 3 nurses and 2 doctors. First, only unclothed persons in direct line of sight without shadowing can get 40% body area burns from thermal radiation, second, duck and cover offers protection in a nuclear attack warning, and G. V. LeRoy had already published, two years earlier, in *J.A.M.A.*, volume 134, 1947, pp. 1143-8, that less than 5% of burns in Hiroshima and Nagasaki were caused by building and debris fires. In medicine it is always possible to expend vast resources on patients who are fatally injured. In a mass casualty situation, doctors should not give up just because they don't have unlimited resources; as at Hiroshima and Nagasaki, they would need to do their best with what they have.] On its website, [www.psr.org](http://www.psr.org), the group boasts that it "led the campaign to end atmospheric nuclear testing." With this campaign, the linear no-threshold (LNT) theory of radiation carcinogenesis became entrenched. It enabled activists to calculate enormous numbers of potential casualties by taking a tiny risk and multiplying it by the population of the earth. As an enduring consequence, the perceived risks of radiation are far out of proportion to actual risks, causing tremendous damage to the American nuclear industry. ... Efforts to save lives were not only futile, but unethical: Any suggestion that nuclear war could be survivable increased its likelihood and was thus tantamount to warmongering, PSR spokesmen warned. ...

'For the mindset that engendered and enables this situation, which jeopardizes the existence of the United States as a nation as well as the lives of millions of its citizens, some American physicians and certain prestigious medical organizations bear a heavy responsibility.

'Ethical physicians should stand ready to help patients to the best of their ability, and not advocate sacrificing them in the name of a political agenda. Even very basic knowledge, especially combined with simple, inexpensive advance preparations, could save countless lives.'

Dr Theodore B. Taylor, *Proceedings of the Second Interdisciplinary Conference on Selected Effects of a General War*, DASIAC Special Report 95, July 1969, vol. 2, DASA-2019-2, AD0696959, page 298 (also linked here):

'I must just say that as far as I'm concerned I have had some doubts about whether we should have had a civil defense program in the past. I have no doubt whatsoever now, for this reason, that I've seen ways in which the deterrent forces can fail to hold things off, so that no matter what our national leaders do, criminal organizations, what have you, groups of people over which we have no control whatsoever, can threaten other groups of people.'

This point of Taylor is the key fact on the morality. Suppose we disarm and abandon nuclear power. That won't stop fallout from a war, terrorists, or a foreign reactor blast from coming. Civil defence knowledge is needed. Even when America has ABM, it will be vulnerable to wind carried fallout. No quantity of pacifist hot air will protect people against radiation.

Charles J. Hitch and Roland B. McKean of the RAND Corporation in their 1960 book *The Economics of Defense in the Nuclear Age*, Harvard University Press, Massachusetts, pp. 310-57:

'With each side possessing only a small striking force, a small amount of cheating would give one side dominance over the other, and the incentive to cheat and prepare a preventative attack would be strong ... With each side possessing, say, several thousand missiles, a vast amount of cheating would be necessary to give one side the ability to wipe out the other's striking capability. ... the more extensive a disarmament agreement is, the smaller the force that a violator would have to hide in order to achieve complete domination. Most obviously, "the abolition of the weapons necessary in a general or 'unlimited' war" would offer the most insuperable obstacles to an inspection plan, since the violator could gain an overwhelming advantage from the concealment of even a few weapons.'

Disarmament after World War I caused the following problem which led to World War II (reported by Winston S. Churchill in the London Daily Express newspaper of November 1, 1934):

'Germany is arming secretly, illegally and rapidly. A reign of terror exists in Germany to keep secret the feverish and terrible preparations they are making.'

British Prime Minister Thatcher's address to the United Nations General Assembly on disarmament on 23 June 1982, where she pointed out that in the years since the nuclear attacks on Hiroshima and Nagasaki, 10 million people had been killed by 140 non-nuclear conflicts:

'The fundamental risk to peace is not the existence of weapons of particular types. It is the disposition on the part of some states to impose change on others by resorting to force against other nations ... Aggressors do not start wars because an adversary has built up his own strength. They start wars because they believe they can gain more by going to war than by remaining at peace.'

J. D. Culshaw, the then Director of the U.K. Home Office Scientific Advisory Branch, stated in his article in the Scientific Advisory Branch journal *Fission Fragments*, September 1972 (issue No. 19), classified 'Restricted':

'Apart from those who don't want to know or can't be bothered, there seem to be three major schools of thought about the nature of a possible Third World War ...

\* The first group think of something like World War II but a little worse ...



\* `... the second of World War II but very much worse ...

\* `and the third group think in terms of a catastrophe ...

'When the Armageddon concept is in favour, the suggestion that such problems exist leads to "way out" research on these phenomena, and it is sufficient to mention a new catastrophic threat [e.g., 10 years later this was done by Sagan with "nuclear winter" hype, which turned out to be fake because modern concrete cities can't produce firestorms like 1940s wooden-built areas of Hamburg, Dresden and Hiroshima] to stimulate research into the possibilities of it arising. The underlying appeal of this concept is that if one could show that the execution of all out nuclear, biological or chemical warfare would precipitate the end of the world, no one but a mad man would be prepared to initiate such a war. [However, as history proves, plenty of mad men end up gaining power and leading countries into wars.]'

J. K. S. Clayton, then Director of the U.K. Home Office Scientific Advisory Branch, stated in his introduction, entitled *The Challenge – Why Home Defence?*, to the 1977 Home Office Scientific Advisory Branch *Training Manual for Scientific Advisers*:

'Since 1945 we have had nine wars – in Korea, Malaysia and Vietnam, between China and India, China and Russia, India and Pakistan and between the Arabs and Israelis on three occasions. We have had confrontations between East and West over Berlin, Formosa and Cuba. There have been civil wars or rebellions in no less than eleven countries and invasions or threatened invasions of another five. Whilst it is not suggested that all these incidents could have resulted in major wars, they do indicate the aptitude of mankind to resort to a forceful solution of its problems, sometimes with success. ...'

It is estimated that Mongol invaders exterminated 35 million Chinese between 1311-40, without modern weapons. Communist Chinese killed 26.3 million dissenters between 1949 and May 1965, according to detailed data compiled by the Russians on 7 April 1969. The Soviet communist dictatorship killed 40 million dissenters, mainly owners of small farms, between 1917-59. Conventional (non-nuclear) air raids on Japan killed 600,000 during World War II. The single incendiary air raid on Tokyo on 10 March 1945 killed 140,000 people (more than the total for nuclear bombs on Hiroshima and Nagasaki combined) at much less than the \$2 billion expense of the Hiroshima and Nagasaki nuclear bombs! Non-nuclear air raids on Germany during World War II killed 593,000 civilians. The argument that the enemy will continue stocking megaton fallout weapons if we go to cleaner weapons is irrelevant for deterrence, since we're not planning to start war, just to credibly deter invasions. You should not try to lower your standards of warfare to those of your enemy to appease groupthink taboos, or you will end up like Britain's leaders in the 1930s, trying to collaborate with fascists for popular applause.

 of Lords debate *Nuclear Weapons: Destructive Power*, published in Hansard, 14 June 1988:

Lord Hailsham of Saint Marylebone: 'My Lords, if we are going into the question of lethality of weapons and seek thereby to isolate the nuclear as distinct from the so-called conventional range, is there not a danger that the public may think that Vimy, Passchendaele and Dresden were all right—sort of tea parties—and that nuclear war is something which in itself is unacceptable?'

Lord Trefgarne: 'My Lords, the policy of making Europe, or the rest of the world, safe for conventional war is not one that I support.'

House of Commons debate *Civil Defence* published in Hansard, 26 October 1983:

Mr. Bill Walker (Tayside, North): 'I remind the House that more people died at Stalingrad than at Hiroshima or Nagasaki. Yet people talk about fighting a conventional war in Europe as if it were acceptable. One rarely sees demonstrations by the so-called peace movement against a conventional war in Europe, but it could be nothing but ghastly and horrendous. The casualties would certainly exceed those at Stalingrad, and that cannot be acceptable to anyone who wants peace'

On 29 October 1982, Thatcher stated of the Berlin Wall: 'In every decade since the war the Soviet leaders have been reminded that their pitiless ideology only survives because it is maintained by force. But the day comes when the anger and frustration of the people is so great that force cannot contain it. Then the edifice cracks: the mortar crumbles ... one day, liberty will dawn on the other side of the wall.'

On 22 November 1990, she said: 'Today, we have a Europe ... where the threat to our security from the overwhelming conventional forces of the Warsaw Pact has been removed; where the Berlin Wall has been torn down and the Cold War is at an end. These immense changes did not come about by chance. They have been achieved by strength and resolution in defence, and by a refusal ever to be intimidated.'

'The case for civil defence stands regardless of whether a nuclear deterrent is necessary or not. ... Even if the U.K. were not itself at war, we would be as powerless to prevent fallout from a nuclear explosion crossing the sea as was King Canute to stop the tide.' – U.K. Home Office leaflet, *Civil Defence*, 1982.

'... peace cannot be guaranteed absolutely. Nobody can be certain, no matter what policies this or any other Government were to adopt, that the United Kingdom would never again be attacked. Also we cannot tell what form such an attack might take. Current strategic thinking suggests that if war were to break out it would start with a period of conventional hostilities of uncertain duration which might or might not escalate to nuclear conflict. ... while nuclear weapons exist there must always be a chance, however small, that they will be used against us [like gas bombs in World War II]. ... as a consequence of war between other nations in which we were not involved fall out from nuclear explosions could fall on a neutral Britain. ... conventional war is not the soft option that is sometimes

suggested. It is also too easily forgotten that in World War II some 50 million people died and that conventional weapons have gone on killing people ever since 1945 without respite.' – The Minister of State, Scottish Office (Lord Gray of Contin), House of Lords debate on Civil Defence (General Local Authority Functions) Regulations, Hansard, vol. 444, cc. 523-49, 1 November 1983.

'All of us are living in the light and warmth of a huge hydrogen bomb, 860,000 miles across and 93 million miles away, which is in a state of continuous explosion.' – Dr Isaac Asimov.

'Dr Edward Teller remarked recently that the origin of the earth was somewhat like the explosion of the atomic bomb...' – Dr Harold C. Urey, *The Planets: Their Origin and Development*, Yale University Press, New Haven, 1952, p. ix.

'But compared with a supernova a hydrogen bomb is the merest trifle. For a supernova is equal in violence to about a million million million million hydrogen bombs all going off at the same time.' – Sir Fred Hoyle (1915-2001), *The Nature of the Universe*, Pelican Books, London, 1963, p. 75.

'In fact, physicists find plenty of interesting and novel physics in the environment of a nuclear explosion. Some of the physical phenomena are valuable objects of research, and promise to provide further understanding of nature.' – Dr Harold L. Brode, The RAND Corporation, 'Review of Nuclear Weapons Effects,' *Annual Review of Nuclear Science*, Volume 18, 1968, pp. 153-202.

'It seems that similarities do exist between the processes of formation of single particles from nuclear explosions and formation of the solar system from the debris of a [ $4 \times 10^{28}$  megatons of TNT equivalent, type Ia] supernova explosion. We may be able to learn much more about the origin of the earth, by further investigating the process of radioactive fallout from the nuclear weapons tests.' – Dr Paul K. Kuroda (1917-2001), University of Arkansas, 'Radioactive Fallout in Astronomical Settings: Plutonium-244 in the Early Environment of the Solar System,' pages 83-96 of *Radionuclides in the Environment: A Symposium Sponsored By the Division of Nuclear Chemistry and Technology At the 155th Meeting of the American Chemical Society, San Francisco, California, April 1-3, 1968*, edited by Symposium Chairman Dr Edward C. Freiling (1922-2000) of the U.S. Naval Radiological Defense Laboratory, Advances in Chemistry Series No. 93, American Chemical Society, Washington, D.C., 1970.

Dr Paul K. Kuroda (1917-2001) in 1956 correctly predicted the existence of water-moderated natural nuclear reactors in flooded uranium ore seams, which were discovered in 1972 by French physicist Francis Perrin in three ore deposits at Oklo in Gabon, where sixteen sites operated as natural nuclear reactors with self-sustaining nuclear fission 2,000 million years ago, each lasting several hundred thousand years, averaging 100 kW. The radioactive waste they generated remained in situ for a period of 2,000,000,000 years without escaping. They were discovered during investigations into why the U-235 content of the uranium in the ore was only 0.7171% instead of the normal 0.7202%. Some of the ore, in the middle of the natural reactors, had a U-235 isotopic abundance of just



0.440%. Kuroda's brilliant paper is entitled, 'On the Nuclear Physical Stability of the Uranium Minerals', published in the *Journal of Chemical Physics*, vol. 25 (1956), pp. 781-782 and 1295-1296.

A type Ia supernova explosion, always yielding  $4 \times 10^{28}$  megatons of TNT equivalent, results from the critical mass effect of the collapse of a white dwarf as soon as its mass exceeds 1.4 solar masses due to matter falling in from a companion star. The degenerate electron gas in the white dwarf is then no longer able to support the pressure from the weight of gas, which collapses, thereby releasing enough gravitational potential energy as heat and pressure to cause the fusion of carbon and oxygen into heavy elements, creating massive amounts of radioactive nuclides, particularly intensely radioactive nickel-56, but half of all other nuclides (including uranium and heavier) are also produced by the 'R' (rapid) process of successive neutron captures by fusion products in supernovae explosions. Type Ia supernovae occur typically every 400 years in the Milky Way galaxy. On 4 July 1054, Chinese astronomers observed in the sky (without optical instruments) the bright supernova in the constellation Taurus which today is still visible as the Crab Nebula through telescopes. The Crab Nebula debris has a diameter now of 7 light years and is still expanding at 800 miles/second. The supernova debris shock wave triggers star formation when it encounters hydrogen gas in space by compressing it and seeding it with debris; bright stars are observed in the Orion Halo, the 300 light year diameter remains of a supernova. It is estimated that when the solar system was forming 4,540 million years ago, a supernova occurred around 100 light years away, and the heavy radioactive debris shock wave expanded at 1,000 miles/second. Most of the heavy elements including iron, silicon and calcium in the Earth and people are the stable end products of originally radioactive decay chains from the space burst fallout of a  $7 \times 10^{26}$  megatons thermonuclear explosion, created by fusion and successive neutron captures after the implosion of a white dwarf; a supernova explosion.

How would a  $10^{55}$  megaton hydrogen bomb explosion differ from the big bang? Ignorant answers biased in favour of curved spacetime (ignoring quantum gravity!) abound, such as claims that explosions can't take place in 'outer space' (disagreeing with the facts from nuclear space bursts by Russia and America in 1962, not to mention natural supernova explosions in space!) and that explosions produce sound waves in air by definition! There are indeed major differences in the nuclear reactions between the big bang and a nuclear bomb. But it is helpful to notice the solid physical fact that implosion systems suggest the mechanism of gravitation: in implosion, TNT is well-known to produce an *inward* force on a bomb core, but Newton's 3rd law says there is an equal and opposite reaction force *outward*. In fact, you can't have a radially outward force without an inward reaction force! It's the rocket principle. The rocket accelerates (with force  $F = ma$ ) *forward* by virtue of the recoil from accelerating the exhaust gas (with force  $F = -ma$ ) in the *opposite* direction! Nothing massive accelerates without an equal and opposite reaction force. Applying this *fact* to the measured  $6 \times 10^{-10} \text{ ms}^{-2} \sim Hc$  cosmological acceleration of matter radially outward from observers in the universe which was predicted accurately in 1996 and later observationally discovered in 1999 (by Perlmutter, et al.), we find an outward force  $F = ma$  and inward reaction force by the 3rd law. The inward force allows quantitative predictions, and is mediated by gravitons, predicting gravitation in a calculable way (unlike string theory, which is just a landscape of  $10^{500}$  different perturbative theories

and so can't make any falsifiable predictions about gravity). So it seems as if nuclear explosions do indeed provide helpful analogies to natural features of the world, and the mainstream lambda-CDM model of cosmology – with its force-fitted unobserved *ad hoc* speculative 'dark energy' – ignores and sweeps under the rug major quantum gravity effects which increase the physical understanding of particle physics, particularly force unification and the relation of gravitation to the existing electroweak  $SU(2) \times U(1)$  section of the Standard Model of fundamental forces.

Richard Lieu, Physics Department, University of Alabama, 'Lambda-CDM cosmology: how much suppression of credible evidence, and does the model really lead its competitors, using all evidence?', <http://arxiv.org/abs/0705.2462>.

Even Einstein grasped the possibility that general relativity's lambda-CDM model is at best just a classical approximation to quantum field theory, at the end of his life when he wrote to Besso in 1954:

'I consider it quite possible that physics cannot be based on the [classical differential equation] field principle, i.e., on continuous structures. In that case, nothing remains of my entire castle in the air, [non-quantum] gravitation theory included ...'

'Science is the organized skepticism in the reliability of expert opinion.' – Professor Richard P. Feynman

from: [http://glasstone.blogspot.it/2013\\_10\\_01\\_archive.html](http://glasstone.blogspot.it/2013_10_01_archive.html)

**Military Story**

